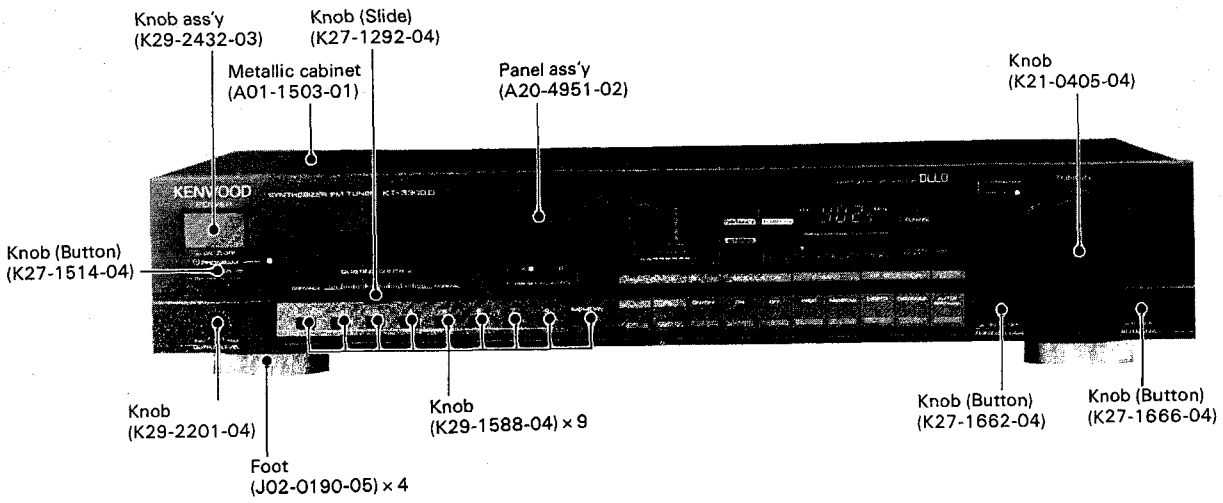
SYNTHESIZER FM TUNER

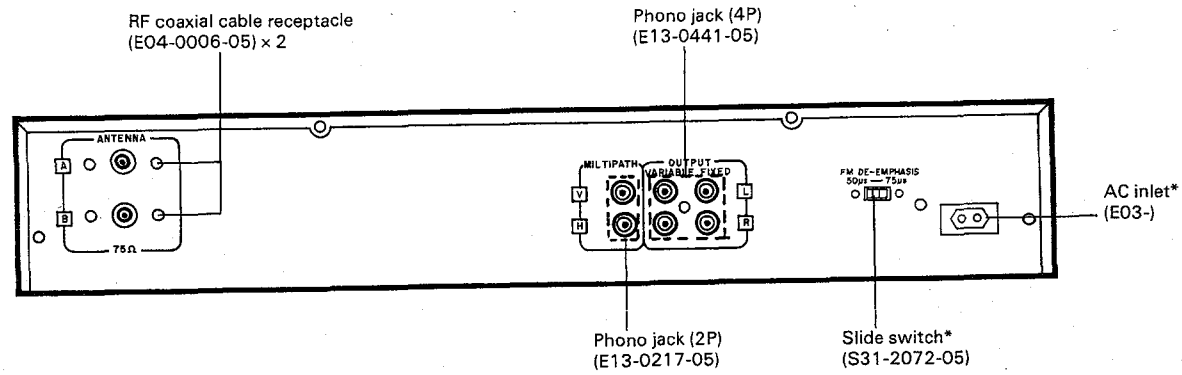
KT-3300D

SERVICE MANUAL

KENWOOD

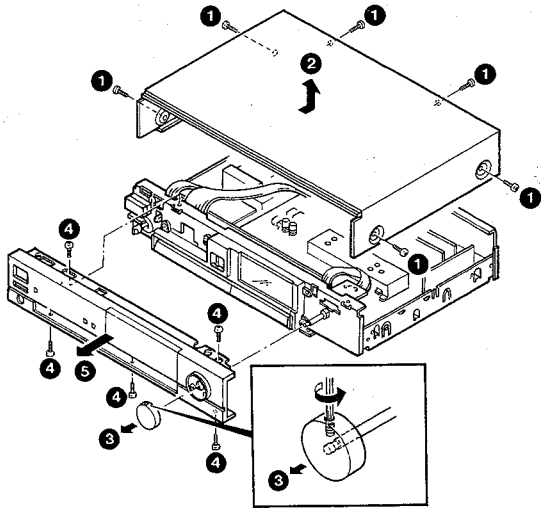
B51-3093-00 (G) 2159



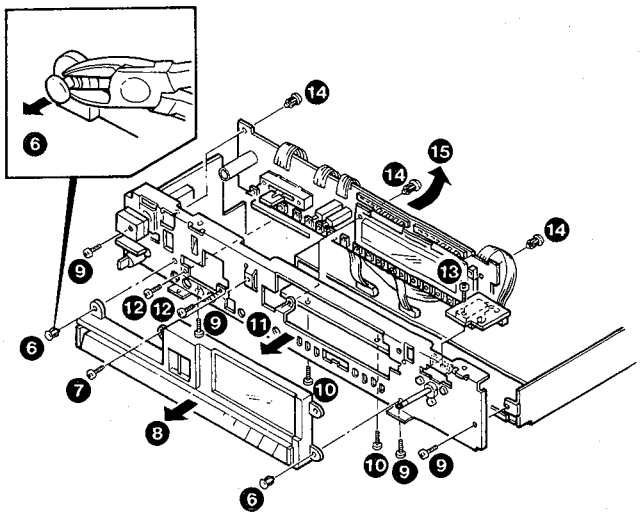


DISASSEMBLY FOR REPAIR

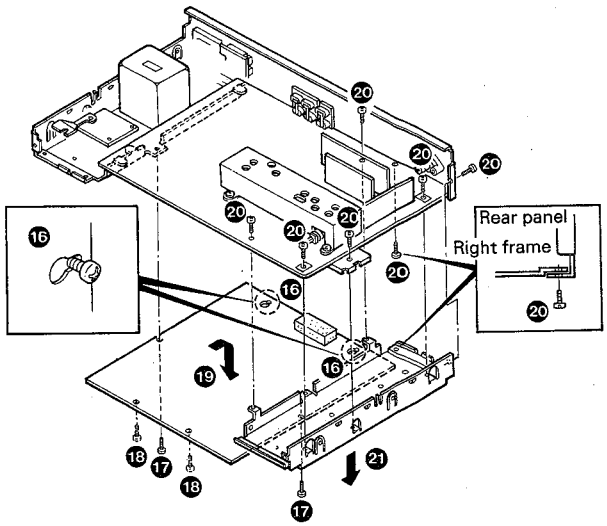
1. Remove the 6 screws on the metallic cabinet ❶.
2. Remove the metallic cabinet in the direction of the arrow ❷.
3. Loosen halfway the set screw of slotted head on the knob, then remove the knob from the front panel ❸.
4. Remove the 5 screws on the front panel ❹.
5. Remove the front panel in the direction of the arrow ❺.



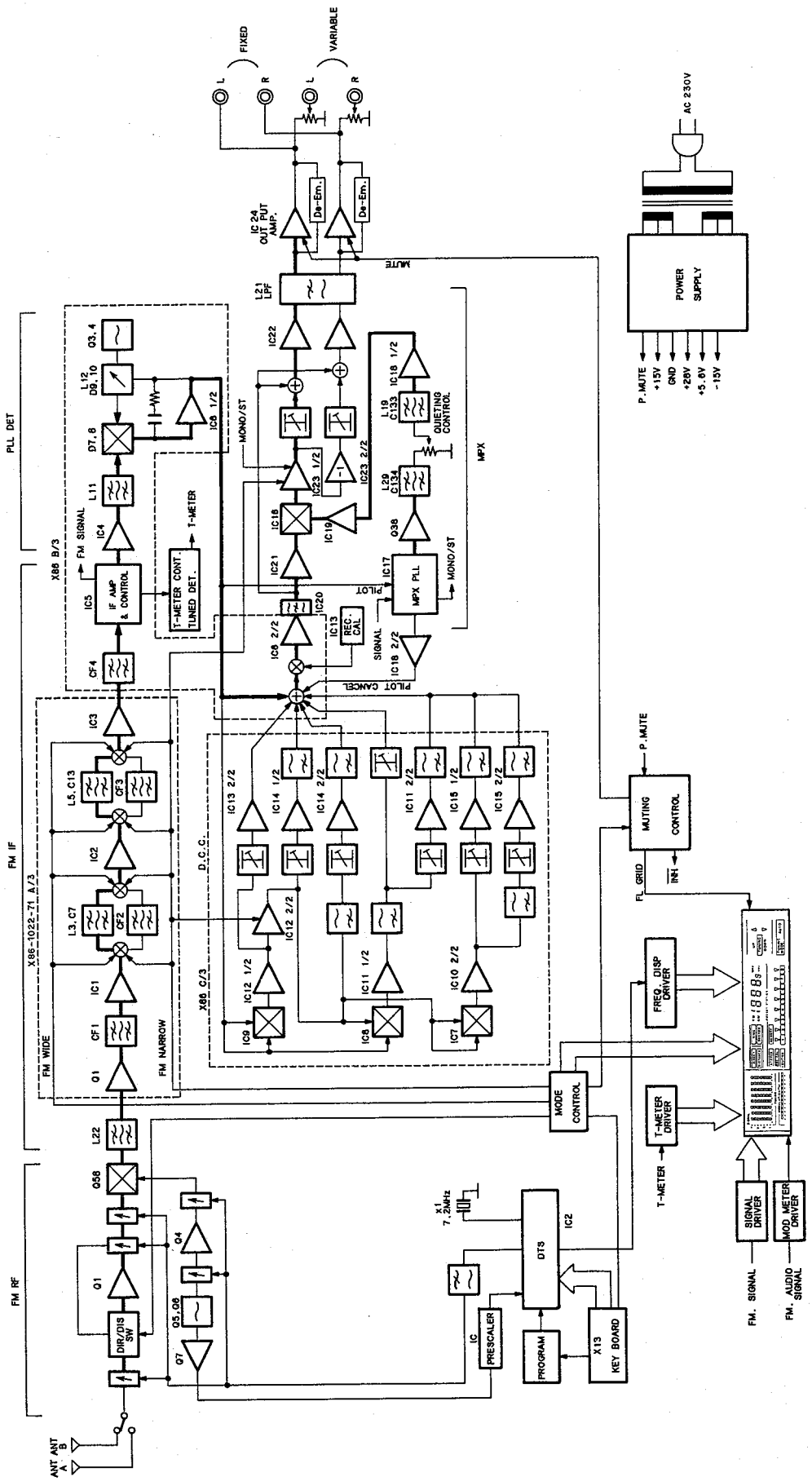
6. Remove 2 push rivets retaining the escutcheon to the sub-panel ❻.
7. Remove the screw on the escutcheon ❼.
8. Remove the escutcheon in the direction of the arrow ❽.
9. Remove the 4 screws on the sub-panel (front side: 2, lower side: 2) ❾.
10. Remove the 2 screws at the sub-panel on the bottom plate ❿.
11. Pull out the sub-panel slightly toward the front ⓫.
12. Remove the 2 screws on the Quieting control unit ⓬.
13. Remove the screw on the Sub-unit (X13-5422-71) (D/5), then remove the Sub-unit (X13-) (D/5) ⓭.
14. Remove 3 push rivets retaining the Sub-unit (X13-) (A/5) to the sub-panel ⓮.
15. Remove the Sub-unit (X13-) (A/5) in the direction of the arrow ⓯.



16. Loosen halfway the 2 screws at the rear side on the bottom plate ⓰.
17. Remove the 2 screws at the front side on the bottom plate ⓱.
18. When removing the bottom plate only, also remove the 2 screws on the front side ⓲.
19. Remove the bottom plate ⓳.
20. Remove the 7 screws retaining the right frame (4 on the tuner unit, 2 on the rear panel and 1 screw from the frame at the bottom of the board) ⓴.
21. Pull out the right frame slightly toward the front and remove it ㉑.



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

Function of components

Tuner unit (X05-3162-71)

Components	Use/Function	Operation/Condition/Interchangeability
Q1	1st stage RF amp	The 2nd gate becomes active with High (3.7 V) in DISTANCE mode, and is inoperative with Low (−4 V) in DIRECT mode.
Q4	Tuned buffer	Selectively amplifies the local oscillator output, and supplies it to the mixer.
Q5, 6	Local oscillator	The oscillator circuit is formed of the gate-source capacitance and source-ground capacitance. The frequency is determined by the tank circuit at the gate side.
Q7	Buffer	Amplifies the local oscillator output and sends it to the prescaler.
Q8 ~ 10	PLL low-pass filter	Supplies VT (tuning voltage) by inverting, amplifying and smoothing the phase comparator output from the DTS.
Q11	AND circuit in program circuit	An AND transistor that supplies the clock signal for IC4 (1/2) when Q of IC3 (1/2) is High and $\overline{Q}$ of IC4 (2/2) is Low.
Q12	M8 driver buffer	Converts the impedance of the signal which turns memory address 8 High during program circuit operation.
Q13, 14	Memory A/B switching driver	During program circuit operation or in A/B switching, drive MC1 and MC2 of DTS in conformity with the output from D-FF.
Q15	Power supply for A/B display LED driver transistor	Goes ON in synchronism with the rise of grid +B signal and supplies the B voltage to the A/B display LED driver transistor.
Q16, 17	A/B display LED driver	Similarly to Q13 and Q14, the D-FF output is also supplied to these LED driver transistors, the voltages of which are supplied from Q15 in synchronism with the grid.
Q18	WIDE +B supply	In WIDE mode, supplies +B in conformity with the WIDE/NARROW switching output from RS-FF.
Q19, 20	AUTO/MANUAL driver	Drive the DTS's AUTO/MANUAL terminals in conformity with the AUTO/MANUAL switching output from D-FF (IC6, 1/2).
Q21	REC CAL +B driver	Supplies REC CAL +B in conformity with the REC CAL ON/OFF output from D-FF (IC6, 2/2).
Q22	Muting driver in REC CAL ON/OFF switching	An emitter follower that drives the muting circuit in REC CAL ON/OFF switching operation.
Q23	DIRECT/DISTANCE switching driver	In DISTANCE mode, supplies +B in conformity with the DIRECT/DISTANCE switching output from RS-FF (IC5, 2/2).
Q24	MODULATION display OFF driver	A PNP emitter follower that goes ON when MODULATION is OFF, in conformity with the MOD ON/OFF output from RS-FF (IC7, 2/2).
Q25	Muting driver	When power is turned ON/OFF or when the mode is switched, goes ON to turn the muting signal High.
Q26	+B supply	Amplifies the current output from the power control IC (IC12) and supplies the power to the blocks in the set.
Q27	−B supply	Amplifies the current output from the power control IC (IC12) and supplies the power to the blocks in the set.
Q28	Grid +B supply	Supplies the grid +B voltage (17.5 V). The voltage is controlled by Q29 and the starting by Q30.
Q29	Grid +B control	Controls the grid +B voltage based on the comparison between −B and G.
Q30	Grid +B start control	When power is turned ON, delays the rise of the grid +B voltage for a specified period.
Q31	Low-pass filter +B control	Controls the grid +B voltage based on the comparison between −B and G.
Q32	Low-pass filter +B supply	Supplies the power (30.5 V) for the PLL low-pass filter.
Q33	AC detector	When power is turned OFF, goes ON detecting AC OFF and resets the power ON/OFF control circuit to the initial setup.
Q34	REC CAL control	When REC CAL is ON, goes High to turn Q60 ON and to output the REC CAL signal.
Q35	REC CAL control	When REC CAL is ON, goes Low to start REC CAL oscillator.
Q36	Detuning detector-amplifier	Inverts and amplifies the output of opamp which goes Low when the frequency is detuned, and turns the signal detector circuit OFF.
Q37	38 kHz subcarrier amp	The 38 kHz square wave output from Q38 is input to the emitter and output from the collector. The base is supplied with the S meter output voltage so that the 38 kHz signal level varies in accordance with the variation.
Q38	38 kHz subcarrier transmitter	An emitter follower that transfers the 38 kHz signal output from IC17 (AN7418S) to Q32.
Q39	MONO/STEREO switching	Normally, ON, but goes OFF in case of weak electric field, detuning and in monaural mode.
Q40	Stereo beacon illuminator	In stereo reception mode, goes ON to light the beacon in conformity with the output from the collector of Q39.
Q41	SUB demodulator control	Inverts the Q40 output, controls the gate of Q43 and, in monaural mode, turns the SUB demodulator output to null.

Components	Use/Function	Operation/Condition/Interchangeability
Q42	NARROW operation gain adjustment	In NARROW mode, goes ON to increase the SUB demodulator gain.
Q43	SUB demodulator control	Controls the gate in conformity with the Q41 output and, in monaural mode, turns the SUB demodulator output to null.
Q44	Muting (1)	Because of DC leakage from the relatively large-capacity coupling capacitor (C149) in the composite signal output circuit, a shock noise is sometimes generated when muting is released. To prevent it, this transistor goes ON during muting for quick discharge of C149.
Q45 ~ 48	Muting (2)	Performs muting by killing the output amp gain and short-circuiting the output. The attenuation is approx. −75 dB.
Q49 ~ 51	Current Miller circuit	The SUB demodulated signal current is output antiphase from pins 2 and 14 of IC16 (MC1495L). Q49 and Q50 inverts the phase, Q51 inverts the Q49 output, and the outputs from Q50 and Q51 are composed into a current and converted into voltage by IC23.
Q53	NARROW +B	Amplifies the output from opamp IC15 which goes High in NARROW mode.
Q54	WIDE +B	Inverts and amplifies the IC15 output and outputs a High level signal in WIDE mode.
Q55	MPX PLL power supply	Together with 8 V Zener diode D45, supplies the power voltage to the MPX PLL IC.
Q56	Front-end power supply	Together with 13 V Zener diode D46, supplies the power voltage to the front-end block.
Q57	IF amp	Amplifies the mixer output and drives the IFT.
Q58	Mixer	Mixes and amplifies the antenna input, which has been inserted at L9, and the local oscillator output.
Q59	RF amp	Sends the voltage induced by the 3rd tuning circuit stage to the mixer.
Q60	REC CAL switch	Goes ON when REC CAL is ON to conduct the signal from the oscillator.
IC1	Prescaler	Divides the local oscillator signal and sends it to the DTS.
IC2	DTS	Multifunction LSI IC including PLL phase comparator, frequency memories and band switching function.
IC3, 4	Program function	At the rise of $\overline{\text{INH}}$ signal, switches the memory between the Last channel → Channel 8 (A or B) → Channel 8 (B or A). Manual A/B switching is also available.
IC5	WIDE/NARROW, DIRECT/DISTANCE switching	The R-SFF that switches between WIDE and NARROW and between DIRECT and DISTANCE.
IC6	AUTO/MANUAL, REC CAL ON/OFF switching	The D-FF that switches between AUTO and MANUAL and REC CAL ON and OFF.
IC7	MODULATION ON/OFF and muting relay	IC7 (2/2) (pins 8 to 13) is used to switch the MODULATION display ON/OFF, and (1/2) (pins 1 to 6) is the relay gate for driving muting by differentiating IC5 output.
IC8	Relay phase inverter	IC8 (1/4) is the NOR gate for the REC CAL and IC7 outputs, (2/4) is the DTS MUTE inverter gate, and (4/4) is used to drive the inverter gate of (1/4) and muting transistor Q25.
IC10	Control in power ON/OFF	When power is turned ON, controls the generations of $\overline{\text{INH}}$ signal, grid ON timing signal and muting release signal.
IC11	3-terminal 5 V-line regulator	Supplies the power for the 5 V system.
IC12	Power voltage control	Controls the ± 15 V power system.
IC13	REC CAL OSC	Oscillates the REC CAL signal (400 Hz, equivalent to 50% modulation).
IC14	Auto-stop signal generator	Supplies the auto-stop signal by detecting detuning with IC14 (2/2) and detecting level with (1/2).
IC15	DIRECT/DISTANCE and WIDE/NARROW switching	IC15 (1/2) switches between DIRECT/DISTANCE, and (2/2) switches between WIDE/NARROW.
IC16	SUB demodulator linear multiplier	Pins 4 and 8 accept the 38 kHz subcarrier inputs and pins 9 and 12 accept the composite signal inputs. These signals are linear-multiplies and the current is output at pins 2 and 14. (For details, read the circuit operation description.)
IC17	MPX PLL	Outputs the 38 kHz subcarrier and 19 kHz signals in synchronism with the pilot signal in the DETECTOR OUT signal.
IC19	38 kHz buffer amp	The buffer used for applying the 38 kHz signal to differential input pins 4 and 8 of IC16.
IC20	Buffer & 114 kHz notch filter	The composite signal buffer amplifier and feedback-type notch filter, used for stopping components above 114 kHz ± alpha.
IC21	Composite signal buffer amp	The buffer amplifier used for supplying the composite signal to differential input pins 9 and 12 of IC16.
IC22	Main/sub adder amp	Adds the SUB demodulator output and composite signal to obtain the L/R signals.
IC23	SUB demodulator current/voltage converter	Converts the current output from IC16 into voltage and inverts its phase.
IC24	Audio output amp	Amplifies the signals which have been separated into L and R by IC22 and filtered by the low-pass filter, and outputs them after providing the required de-emphasis characteristic. Also incorporates the muting function.

IF/DET daughter unit (X86-1022-71)

Components	Use/Function	Operation/Condition/Interchangeability
Q1	IF amp	
Q3, 4	PLL DET VCO	10.7 MHz.
Q5	FM signal switch	Switches from REC CAL or (AM), etc.
Q6	Gain control	Turns ON to raise the gain when in the NARROW mode.
Q7	DCC ON/OFF switch	Receives the auto stop signal and compensates the distortion.
IC1 – 4	IF amp	
IC5	IF system	IF amp, range mute signal generation, S meter, quadrature detection.
IC6 (1/2)	PLL detector DC amp	
IC6 (2/2)	FM/(AM) signal amp	
IC7	4th distortion generation	Linear multiplier.
IC8	3rd distortion generation	Linear multiplier.
IC9	2nd distortion generation	Linear multiplier.
IC10 (2/2)	4th distortion current-voltage conversion	
IC11 (1/2)	3rd distortion current-voltage conversion	
IC11 (2/2)	Distortion phase compensation amp	3rd distortion in stereo mode.
IC12 (1/2)	2nd distortion current-voltage conversion	
IC12 (2/2)	Distortion phase compensation amp	Increase the distortion in NARROW mode.
IC13 (1/2)	Reference voltage generation	Vcc/2 ≈ 7.5 V.
IC13 (2/2)	DET distortion compensation amp	Compensates the distortion in PLL detector.
IC14 (1/2)	MONO distortion compensation amp	For 2nd distortion compensation.
IC14 (2/2)	STEREO distortion compensation amp	For 3rd distortion compensation.
IC15 (1/2)	MAIN signal distortion compensation amp	For 4th distortion compensation.
IC15 (2/2)	STEREO signal distortion compensation amp	For 4th distortion compensation. (10 kHz)

Tuner display unit (X13-5422-71)

Components	Use/Function	Operation/Condition/Interchangeability
Q4, 5	UP/DOWN controller	When turned ON/OFF, controls the UP/DOWN operation. (Q4: UP, Q5: DOWN)
Q6	DISTANCE display control	When turned ON, controls the DISTANCE indicator's OFF.
Q7	WIDE display control	When turned ON, controls the WIDE indicator's OFF.
Q8	AUTO control	AUTO LED flashes.
IC1	S-meter driver	Controls the vertical axis of S (signal strength) meter.
IC2	T-meter driver	Controls the horizontal axis of T-S (tuning-signal strength) meter.
IC3	DIV meter driver	
IC4, 5	FL driver	Converts the low-voltage circuit (0 – 5 V) to FL drive voltage (0 – 18 V).
IC6	Frequency display driver	Status driver for frequency display.
IC7	UP/DOWN controller	Dividing the pulses to UP and DOWN sides depending on the tuning direction.
IC8	Dividing, mono-stable	Divides the tuning pulse and maintains for fixed period.
IC9 1/2 (1– 3)	AUTO control	AUTO LED flashes.
IC9 2/2 (5 – 7)	Level shift	Shifts the center voltage of the tuning meter.
IC10	DIV meter control	Controls the hold and reset operation of DIV meter.

Muting Circuit for Switching Operations

When key switches are pushed, the 5 V voltage is latched by IC5 and IC7. However, the flip-flops of IC6 (1/2) and (2/2) are used with AUTO/MANUAL and REC CAL switchings.

When the DIRECT/DISTANCE or WIDE/NARROW key is operated in normal operation, for example when the mode is switched to DIRECT, pin 11 of IC5 is maintained at High level. Then, via the differentiation circuit, pin 3 of IC7 goes Low level discharging C92. The low level is maintained for a specified period so that the muting signal is generated from pin 3 of IC8.

In REC CAL ON/OFF switching, pin 6 of IC8 is fixed at Low level forcibly by D18, so that the muting signal is not generated by DIRECT/DISTANCE and WIDE/NARROW switchings. In addition, the muting signal from the DTS is neither accepted by the operation of R83 and D18.

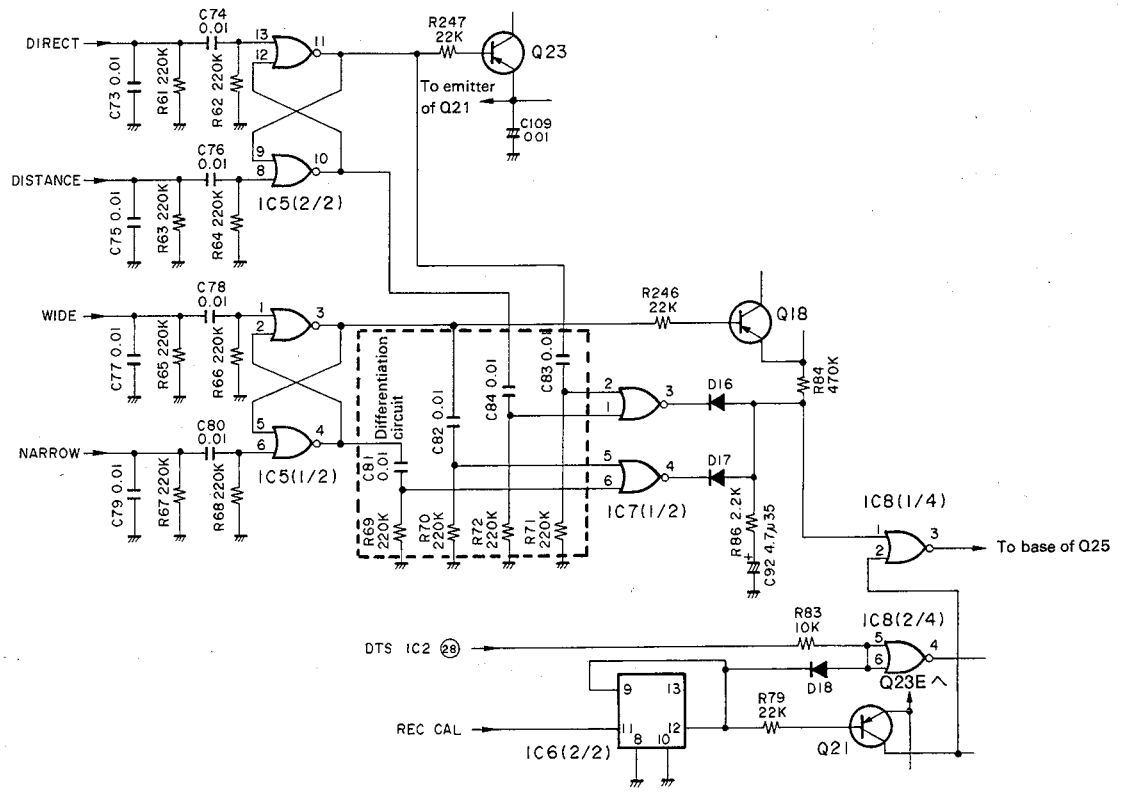


Fig. 1

Muting at Power ON/OFF

When the power is turned ON, IC10 generates the $\overline{\text{INH}}$, FL display ON and audio muting release signals successively. When the power is turned OFF, AC detector transistor Q33 displays the FL display, switches the audio signal in an instant, and turns $\overline{\text{INH}}$ OFF to stop the DTS.
The timing charts are as shown in the diagrams.

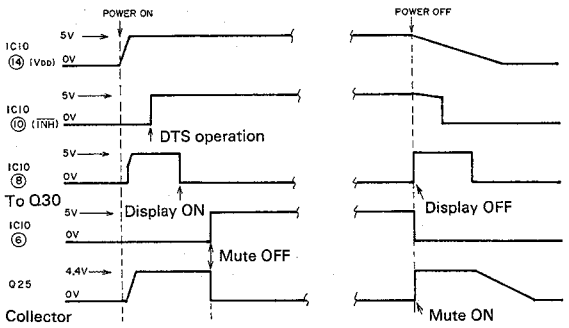


Fig. 2

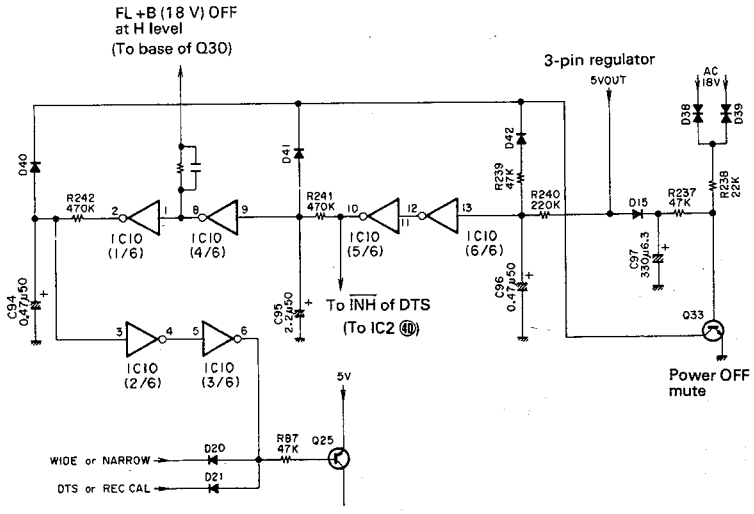


Fig. 3

Auto-Stop Signal Generator Circuit

When no signal input (at no station) (Detune):

Since the range mute signal (LA1231NS; X86-1022-71) is 5V, IC14 ⑦ is −15V. For this, Q36 turns ON and IC14 ② becomes 6.5V. At this time, as the S-meter voltage is less than 1 V, IC14 ① (auto-stop signal output) becomes −15V.

When a weak signal is input (receiving broadcast) (weak signal area: less then approx. 10 dBμV):

The range mute signal becomes 1V or less and IC14 ⑦ becomes +15V. For this, Q36 turns OFF. However, since the S-meter voltage is low, IC14 ① is −15V.

When the broadcast station is received (more than 10 − 14 dBμV):

Since the range mute signal is 0V, Q36 turns OFF and IC14 ② becomes 1V. And since the S-meter voltage is high (IC14 ③ > 1 V), IC14 ① becomes +15V.

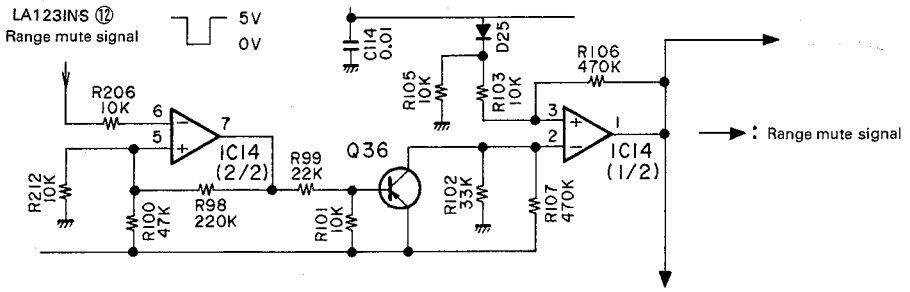


Fig. 4

MPX SUB Decoder (IC16: MC1495L)

The Direct Pure MPX enables stereo decoding without causing beat interference, in theory, by linear-multiplying two analog signals (stereo composite signal and 38 kHz sine wave sub carrier signal).

This unit provides the linear multiplier with high S/N ratio, which is designed with the new theory, so that the high signal-to-noise ratio of 94 dB for the MPX unit itself and the resistance to overmodulation of 400% (dynamic range: 106 dB) are realized while the conventional characteristics are maintained.

In Fig. 5, the composite signal is applied to the differential inputs "X input" (pins 9, 12) and the 38 kHz subcarrier signal is applied to the differential inputs "Y input" (pins 4, 8).

The Y-input differential amp has special non-linear load as shown in the symbol of diode in the diagram. When the signal generated here is used to drive the double-balanced differential amp of Q5 to Q8, switching is not performed but the linear multiplication with the composite signal applied to the X-input pins is executed.

In Fig. 6, the opamp shown by IC19 and IC21 is used for the backup in the voltage/current conversion at the Darlington differential amp in IC16. The opamp can include the Darlington differential transistor in the loop, eliminating distortion due to changes in parameters. The signal output from the differential open-collector design is composed into current by the dual-transistor, high-accuracy current Miller circuit of Q49, Q50 and Q51, and the current obtained is converted into a voltage signal by the current/voltage converter opamp.

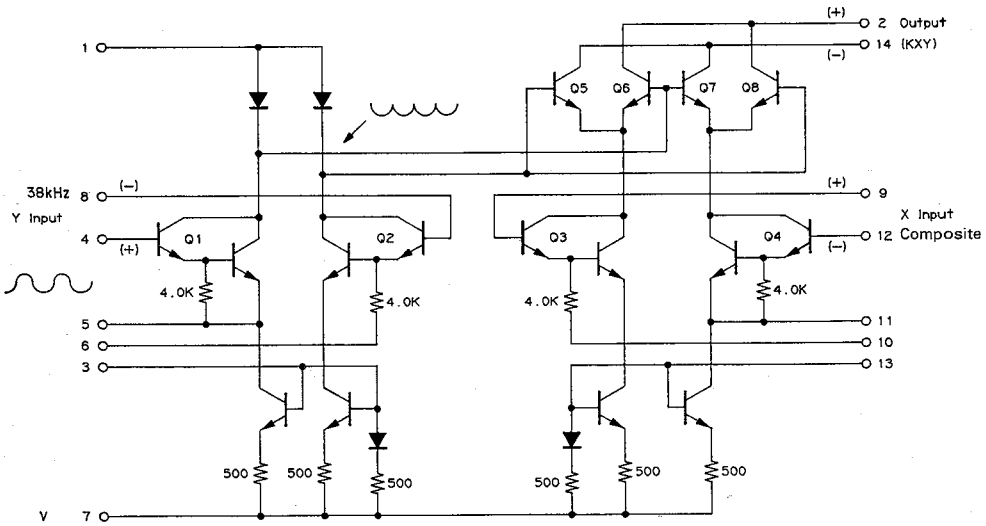


Fig. 5 MC1495L Internal equivalent circuit

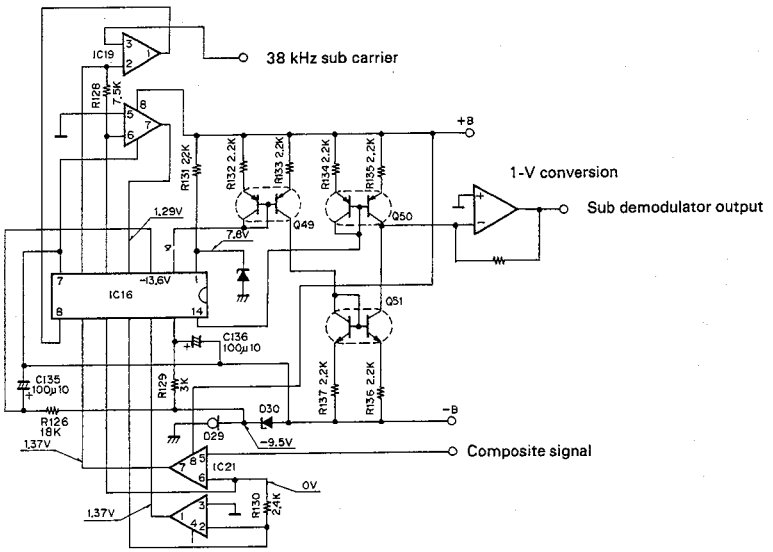


Fig. 6 Actual circuit

Program Circuit

Similarly to the program circuit used with the KT-1010F and KT-880F, the program circuit of this model has the following function cycles; 1) Last channel; 2) M8 of A or B (same side as the Last channel); 3) M8 of B or A; 4) repetition of 2 and 3; .... However, the circuit design is more simplified by using four D-FFs.

When the PROGRAM OFF signal is being applied, three D-FFs are reset so only the switching between A and B is available.

When the PROGRAM OFF signal is Low, the voltages at different points vary as shown below, in conformity with the $\overline{INH}$ signal which is generated in synchronism with power ON/OFF.

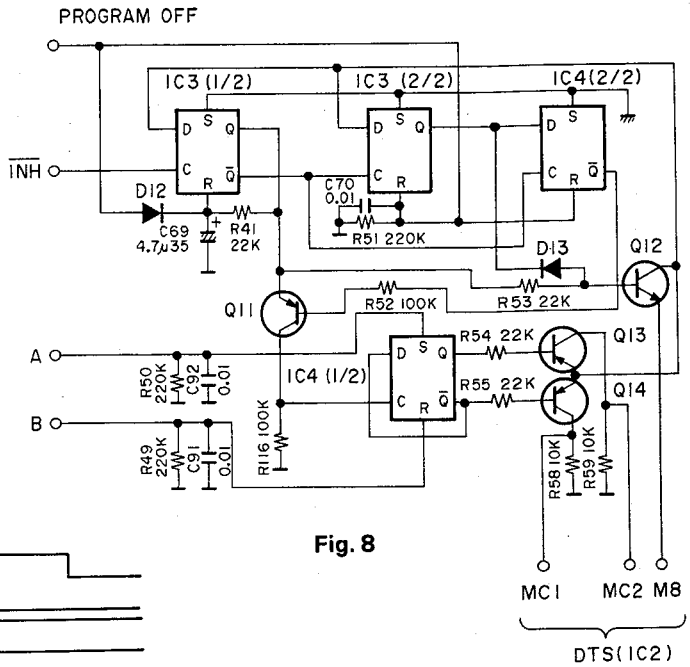


Fig. 8

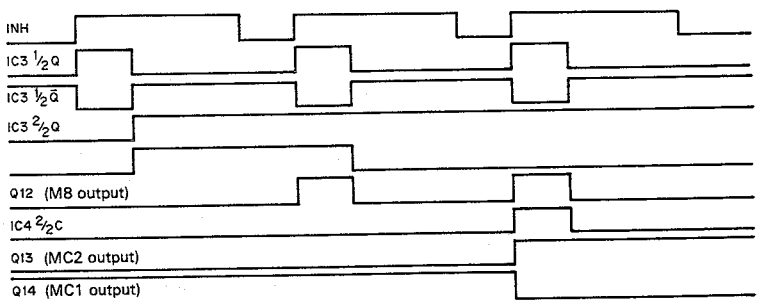


Fig. 7 Timing chart

Non-Stable Multi-Vibrator for Peak Hold and Reset

Since the BA668A deviation meter drive IC provides the peak-hold function as well as the reset pin, when random pulses are applied, a simple peak hold meter will be constructed. For this purpose, this circuit is used as the multi-vibrator consisting of two NOR gates (C-MOS) and oscillates by the mechanism as follows:

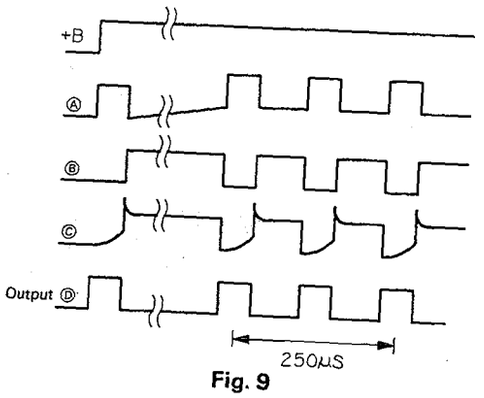


Fig. 9

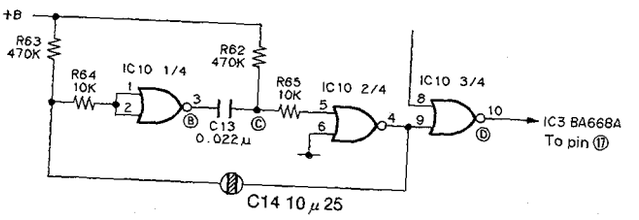


Fig. 10 IC10: μPD4001BC

While two inputs of the first NOR gate are short-circuited, one end of the second NOR gate is grounded. This is because the threshold values of two gates are set differently to prevent the circuit from entering non-oscillation/stable state at the power ON/OFF timing.

Digital Rotary Tuning

The basic configuration is that the transparent slits (30 slits) on the rotating disk attached to the tuning knob pass through PH1 as shown, whereby the rotary direction is identified, until the required reception frequency is obtained (Fig. 14). PH1 is a photo-interrupter incorporating LED (light-emitting diode), phototransistor and logic circuits.

The phototransistors are arranged in a pair.

1. The signal which identifies the rotary direction is output from pin 4.
   Clockwise rotation (tuning to high frequency band): high level.
   Counterclockwise rotation (tuning to low frequency band): low level.
2. The tuning speed is determined by the number of pulses to be output from pin 5 which are proportional to the number of slits.

So that by using these two signals (a and b) the UP and DOWN pulses are obtained, logic circuits IC7 and IC8 are added.

IC7 distributes pulses for UP or DOWN directions.

IC8 prevents malfunction and serves as a frequency divider and monostable multivibrator.

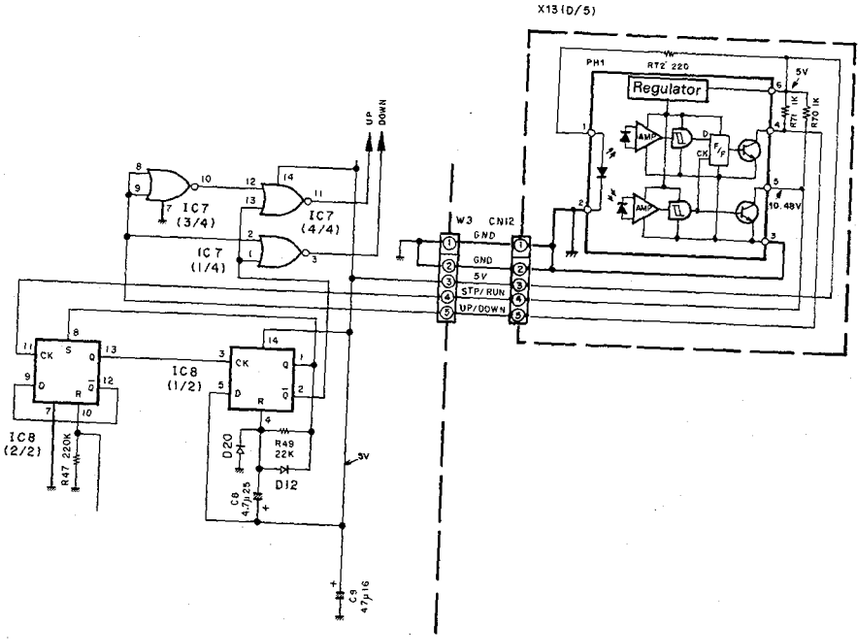


Fig. 11 Digital rotary tuning circuit

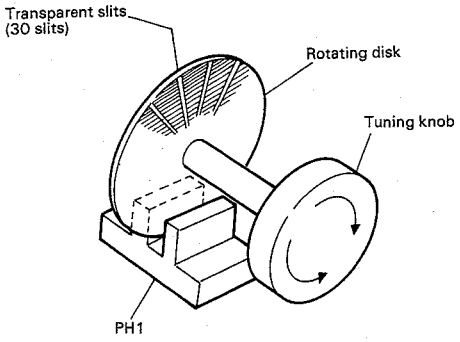


Fig. 14

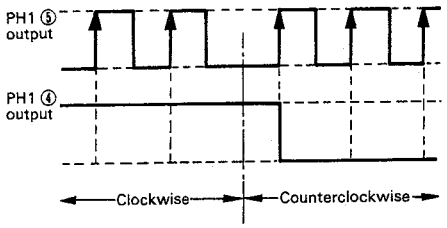


Fig. 12 Operation timing chart of PH1

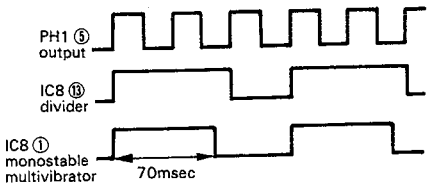


Fig. 13 Timing chart

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION	Unless otherwise specified, the individual switches should be set as following: IF BAND:WIDE RF SELECTOR:DISTANCE MODURATION:ON TUNING MODE:AUTO REC CAL:OFF TUNING LOCK:OFF PROGRAM:OFF ANTENNA:A OUTPUT LEVEL:MAX QUIETING CONTROL:NORMAL						
1	BAND EDGE (1)	–	Connect a DC voltmeter between TP6 and TP7.	TUNING MODE: MANU 87.5MHz	L5 (X05-)	3.0V±0.1V	(a)
2	BAND EDGE (2)	–	Connect a DC voltmeter between TP6 and TP7.	TUNING MODE: MANU 108.0MHz	TC5 (X05-)	25.0V±0.3V	(a)
Repeat alignments 1 and 2 several times.							
3	DISCRIMINATOR (1)	(A) 98.0MHz 0 dev 100dBμ (ANT input)	Connect a DC voltmeter between TP10 and TP11.	98.0MHz	L12 (X86-)	0.000V±10mV	(b)
4	DISCRIMINATOR (2)	(A) 98.0MHz 0 dev 100dBμ (ANT input)	Connect a DC voltmeter between TP16 and TP17.	98.0MHz	L9 (X86-)	0.000V±10mV	(c)
5	RF ALIGNMENT (1)	(A) 90.0MHz 1kHz,±75kHz dev	(B)	90.0MHz	L1～4 (X05-)	Maximum amplitude and symmetry of the oscilloscope display.	
6	RF ALIGNMENT (2)	(A) 106.0MHz 1kHz,±75kHz dev	(B)	106.0MHz	TC1～5 (X05-)	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments 5 and 6 several times.							
7	IFT	(A) 98.0MHz 1kHz,±75kHz dev 2～3dBμ (ANT input)	(B)	98.0MHz	L10,11,22 (X05-) L11(X86-)	Maximum amplitude and symmetry of the oscilloscope display.	
8	AUTO-STOP SENSITIVITY	(A) 98.0MHz Pilot:±6.75kHz dev 12dBμ (ANT input)	–	98.0MHz	VR1 (X86-)	The STEREO indicator lights.	
9	SIGNAL METER DISPLAY	(A) 98.0MHz 0 dev 43dBμ (ANT input)	–	98.0MHz	VR3 (X13-)	Lighting of the 7th dot.	(f)
10	TUNING METER DISPLAY	(A) 98.0MHz Selector: MONO 10Hz,±100～150kHz dev 80dBμ (ANT input)	–	98.0MHz	VR2 (X13-)	Operate so that the red colors at the extremeties of the center light uniformly.	
11	MPX VCO	(C) 98.0MHz 0 dev 80dBμ (ANT input)	Connect a frequency counter to TP15 via an AC voltmeter.	98.0MHz	VR5 (X05-)	76.000kHz±50Hz	(d)
12	PILOT CANCELLER (1)	(C) 98.0MHz 0 dev Pilot:±6.75kHz dev 80dBμ (ANT input)	Connect a AC voltmeter between TP9 and GND	98.0MHz	VR1 (X05-)	Minimum 19kHz output.	(e)
13	PILOT CANCELLER (2)	(C) 98.0MHz 0 dev Pilot:±6.75kHz dev 80dBμ (ANT input)	Connect a AC voltmeter between TP9 and GND	98.0MHz	L20 (X05-)	Minimum 19kHz output.	(e)
Repeat alignements 12 and 13 several times.							
14	SUB CARRIER (38kHz)	(C) 98.0MHz Selector: SUB 100Hz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	L19 (X05-)	Minimum distortion.	
15	DISTORTION(1) DLLD	(C) 98.0MHz Selecter: MONO 1kHz,±75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR3 (X86-)	Minimum distortion.	
16	DISTORTION(2) MONO	(C) 98.0MHz Selecter: MONO 1kHz,±75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR4 (X86-)	Minimum distortion.	

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
17	DISTORTION(3) MONO	(C) 98.0MHz Selector: MONO 1kHz,±75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR6 (X86-)	Minimum distortion.	
18	DISTORTION(4) STEREO	(C) 98.0MHz Selector: L 1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR5 (X86-)	Minimum distortion.	
19	DISTORTION(5) STEREO	(C) 98.0MHz Selector: SUB 1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR7 (X86-)	Minimum distortion.	
Repeat alignments 16～19 several times.							
20	DISTORTION(6)	(C) 98.0MHz Selector: MAIN 10kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR8 (X86-)	Minimum distortion.	
21	DISTORTION(7)	(C) 98.0MHz Selector: L 10kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR9 (X86-)	Minimum distortion.	
22	DISTORTION(8) NARROW	(C) 98.0MHz Selector: L 1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B)	98.0MHz	VR2 (X86-)	Minimum distortion.	
23	SEPARATION(1) L	(C) 98.0MHz Selector: R 1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B) L	98.0MHz	VR4 (X05-)	Minimum crosstalk.	
24	SEPARATION(2) R	(C) 98.0MHz Selector: L 1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B) R	98.0MHz	VR3 (X05-)	Minimum crosstalk.	
25	SEPARATION(3) NARROW	(C) 98.0MHz Selector: R 1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ (ANT input)	(B) L	98.0MHz	VR2 (X05-)	Minimum crosstalk.	
26	DEVIATION DISPLAY	–	–	REC CAL:ON	VR4 (X13-)	Position where the 4th dot lights.	(g)

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG
SECTION MF	Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: IF BAND:WIDE RF SELECTOR:DISTANCE MODURATION:ON TUNING MODE:AUTO REC CAL:OFF TUNING LOCK:OFF PROGRAM:OFF ANTENNA:A OUTPUT LEVEL:MAX QUIETING CONTROL:NORMAL						
1	BORD DE BANDE (1)	–	Connecter un voltmètre CC entre les TP6 et 7.	TUNING MODE: MANU 87.5MHz	L5 (X05-)	3,0V±0.1V	(a)
2	BORD DE BANDE (2)	–	Connecter un voltmètre CC entre les TP6 et 7.	TUNING MODE: MANU 108MHz	TC5 (X05-)	25,0V±0.3V	(a)
	Répéter les points 1 et 2 plusieurs fois.						
3	DISCRIMINATEUR (1)	(A) 98,0MHz 0dév 100dBμ (Entrée ANT)	Connecter un voltmètre CC entre les TP10 et 11.	98,0MHz	L12 (X86-)	0,000V±10mV	(b)
4	DISCRIMINATEUR (2)	(A) 98,0MHz 0dév 100dBμ (Entrée ANT)	Connecter un voltmètre CC entre les TP16 et 17.	98,0MHz	L9 (X86-)	0,000V±10mV	(c)
5	ALIGNEMENT HT (1)	(A) 90,0MHz 1kHz,±75kHz dév	(B)	90,0MHz	L1～4 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
6	ALIGNEMENT HT (2)	(A) 106,0MHz 1kHz,±75kHz dév	(B)	106,0MHz	TC1～5 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
	Répéter les points 5 et 6 plusieurs fois.						
7	TRANSFORMATEUR FI	(A) 98,0MHz 1kHz,±75kHz dév 2～3dBμ (Entrée ANT)	(B)	98,0MHz	L10,11,22 (X05-) L11(X86-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
8	SENSIBILITE ARRET AUTOMATIQUE	(A) 98,0MHz Pilote:±6,75kHz dév 12dBμ (Entrée ANT)	–	98,0MHz	VR1 (X86-)	L'indicateur de stéréo s'allume.	
9	COMPTEUR DE SIGNAL	(A) 98,0MHz 0dév 43dBμ (Entrée ANT)	–	98,0MHz	VR3 (X13-)	Illumination du 7ème point.	(f)
10	COMPTEUR D'ACCORD	(A) 98,0MHz Sélection:MONO 10Hz,±100～150kHz dév 80dBμ (Entrée ANT)	–	98,0MHz	VR2 (X13-)	Faire fonctionner de manière à ce que la couleur rouge aux extrémités du centre s'allume uniformément.	
11	MPX VCO	(C) 98,0MHz 0dév 80dBμ (Entrée ANT)	Connecter un compteur de fréquence à TP15 par l'intermédiaire d'un voltmètre CA.	98,0MHz	VR5 (X05-)	76,000kHz±50Hz	(d)
12	CIRCUIT SUPPRESSION DE SIGNAL PILOTE (1)	(C) 98,0MHz 0dév Pilote: ±6,75kHz dév 80dBμ (Entrée ANT)	Connecter un voltmètre CA entre les TP9 et GND.	98,0MHz	VR1 (X05-)	19kHz sortie minimale.	(e)
13	CIRCUIT SUPPRESSION DE SIGNAL PILOTE (2)	(C) 98,0MHz 0dév Pilote: ±6,75kHz dév 80dBμ (Entrée ANT)	Connecter un voltmètre CA entre les TP9 et GND.	98,0MHz	L20 (X05-)	19kHz sortie minimale.	(e)
	Répéter les points 12 et 13 plusieurs fois.						
14	SOUS-PORTEURSE (38kHz)	(C) 98,0MHz Sélection: SUB 100Hz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	L19 (X05-)	Distorsion minimale.	
15	DISTORSION(1) DLLD	(C) 98,0MHz Sélection: MONO 1kHz,±75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR3 (X86-)	Distorsion minimale.	
16	DISTORSION(2) MONO	(C) 98,0MHz Sélection: MONO 1kHz,±75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR4 (X86-)	Distorsion minimale.	

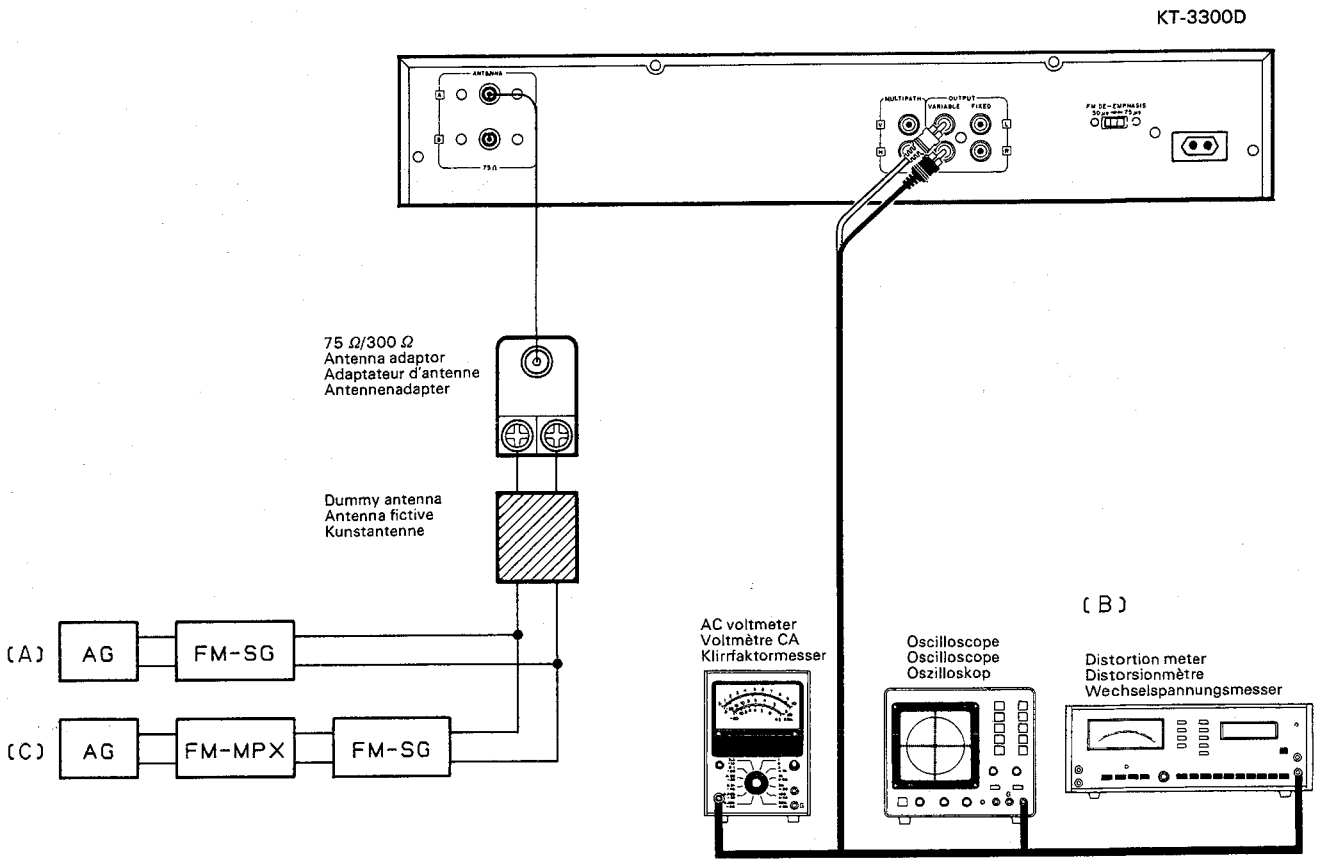
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG
17	DISTORSION(3) MONO	(C) 98,0MHz Sélection: MONO 1kHz,±75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR6 (X86-)	Distorsion minimale.	
18	DISTORSION(4) STEREO	(C) 98,0MHz Sélection: G 1kHz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR5 (X86-)	Distorsion minimale.	
19	DISTORSION(5) STEREO	(C) 98,0MHz Sélection: SUB 1kHz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR7 (X86-)	Distorsion minimale.	
		Répéter les alignements 16~19 plusieurs fois.					
20	DISTORSION(6)	(C) 98,0MHz Sélection: Principal 10kHz,±68,25kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR8 (X86-)	Distorsion minimale.	
21	DISTORSION(7)	(C) 98,0MHz Sélection: G 10kHz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR9 (X86-)	Distorsion minimale.	
22	DISTORSION(8) NARROW	(C) 98,0MHz Sélection: G 1kHz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B)	98,0MHz	VR2 (X86-)	Distorsion minimale.	
23	SEPARATION(1) G	(C) 98,0MHz Sélection: D 1kHz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B) G	98,0MHz	VR4 (X05-)	Diaphonie minimale.	
24	SEPARATION(2) D	(C) 98,0MHz Sélection: G 1kHz,±68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B) D	98,0MHz	VR3 (X05-)	Diaphonie minimale.	
25	SEPARATION(3) NARROW	(C) 98,0MHz Sélection: D 1kHz,68,25kHz dév Pilote:±6,75kHz dév 80dBμ (Entrée ANT)	(B) G	98,0MHz	VR2 (X05-)	Diaphonie minimale.	
26	DEVIATION	–	–	REC CAL: ON	VR4 (X13-)	Position où le 4ème point s'allume.	(g)

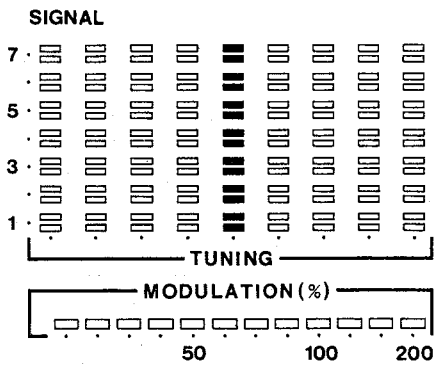
ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen: IF BAND:WIDE RF SELECTOR:DISTANCE MODURATION:ON TUNING MODE:AUTO REC CAL:OFF TUNING LOCK:OFF PROGRAM:OFF ANTENNA:A OUTPUT LEVEL:MAX QUIETING CONTROL:NORMAL							
1	BANDKANTE (1)	–	Einen Gleichspannungs-messer zwischen TP6 und TP7 anschließen.	TUNING MODE: MANU 87,5MHz	L5 (X05-)	3,0V±0,1V	(a)
2	BANDKANTE (2)	–	Einen Gleichspannungs-messer zwischen TP6 und TP7 anschließen.	TUNING MODE: MANU 108,0MHz	TC5 (X05-)	25,0V±0,3V	(a)
Abstimmungen 1 und 2 mehrere Male wiederholen.							
3	DISKRIMINATOR (1)	(A) 98,0MHz 0 Hub 100dBμ (ANT-Eingang)	Einen Gleichspannungs-messer zwischen TP10 und TP11 anschließen.	98,0MHz	L12 (X86-)	0,000V±10mV	(b)
4	DISKRIMINATOR (2)	(A) 98,0MHz 0 Hub 100dBμ (ANT-Eingang)	Einen Gleichspannungs-messer zwischen TP16 und TP17 anschließen.	98,0MHz	L9 (X86-)	0,000V±10mV	(c)
5	HF-ABGLEICH (1)	(A) 90,0MHz 1kHz,±75kHz Hub	(B)	90,0MHz	L1～4 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
6	HF-ABGLEICH (2)	(A) 106,0MHz 1kHz,±75kHz Hub	(B)	106,0MHz	TC1～5 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen 5 und 6 mehrere Male wiederholen.							
7	ZF-ÜBERTRAGR	(A) 98,0MHz 1kHz,±75kHz Hub 2～3dBμ (ANT-Eingang)	(B)	98,0MHz	L10,11,22 (X05-) L11(X86-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
8	AUTOSTOP-EMPFINDLICHKEIT	(A) 98,0MHz Pilotten:±6,75 Hub 12dBμ (ANT-Eingang)	–	98,0MHz	VR1 (X86-)	Die Stereoanzeige leuchtet.	
9	SIGNALMESSER	(A) 98,0MHz 0 Hub 43dBμ (ANT-Eingang)	–	98,0MHz	VR3 (X13-)	Der 7. Punkt leuchtet.	(f)
10	ABSTIMMSIGNAL MESSER	(A) 98,0MHz Wähler: MONO 10Hz,±100～150kHz Hub 80dBμ (ANT-Eingang)	–	98,0MHz	VR2 (X13-)	So bedienen, daß die roten Farben an den Seiten der Mitte gleichmäßig leuchten.	
11	MPX VCO	(C) 98,0MHz 0 Hub 80dBμ (ANT-Eingang)	Einen Frequenzmesser an TP15 über einen Wechselspannungsmesser anschließen.	98,0MHz	VR5 (X05-)	76,000kHz±50Hz	(d)
12	PILOT-LÖSCHER (1)	(C) 98,0MHz 0 Hub Piloten:±6,75kHz Hub 80dBμ (ANT-Eingang)	Einen Wechselspannungsmesser zwischen TP9 und GND anschließen.	98,0MHz	VR1 (X05-)	19kHz Minimaler Ausgang.	(e)
13	PILOT-LÖSCHER (2)	(C) 98,0MHz 0 Hub Piloten:±6,75kHz Hub 80dBμ (ANT-Eingang)	Einen Wechselspannungsmesser zwischen TP9 und GND anschließen.	98,0MHz	L20 (X05-)	19kHz Minimaler Ausgang.	(e)
Abstimmungen 12 und 13 mehrere Male wiederholen.							
14	HILFSTRÄGER (38kHz)	(C) 98,0MHz Wähler: SUB 100Hz,±68,25kHz Hub Piloten:±6,75kHz Hub 80dBμ (ANT-Eingang)	(B)	98,0MHz	L19 (X05-)	Minimal Klirrfaktor.	
15	KLIRRFAKTOR(1) DLLD	(C) 98,0MHz Wähler: MONO 1kHz,±40,0kHz Hub 80dBμ (ANT-Eingang)	(B)	98,0MHz	VR3 (X86-)	Minimal Klirrfaktor.	
16	KLIRRFAKTOR(2) MONO	(C) 98,0MHz Wähler: MONO 1kHz,±40,0kHz Hub 80dBμ (ANT-Eingang)	(B)	98,0MHz	VR4 (X86-)	Minimal Klirrfaktor.	

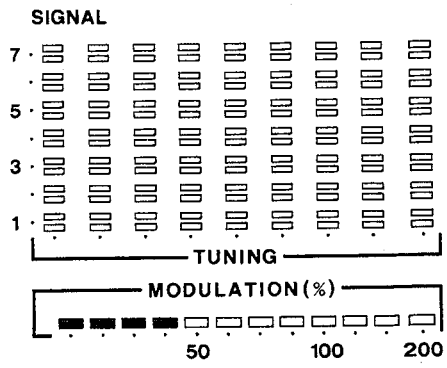
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
17	KLIRRFAKTOR(3) MONO	(C) 98,0MHz Wähler: MONO 1kHz,±40,0kHz Hub 80dBμ(ANT-Eingang)	(B)	98,0MHz	VR6 (X86-)	Minimal Klirrfaktor.	
18	KLIRRFAKTOR(4) STEREO	(C) 98,0MHz Wähler: L 1kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B)	98,0MHz	VR5 (X86-)	Minimal Klirrfaktor.	
19	KLIRRFAKTOR(5) STEREO	(C) 98,0MHz Wähler: SUB 1kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B)	98,0MHz	VR7 (X86-)	Minimal Klirrfaktor.	
Abstimmungen 16～19 mehrere Male wiederholen.							
20	KLIRRFAKTOR(6)	(C) 98,0MHz Wähler: Haupt 10kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B)	98,0MHz	VR8 (X86-)	Minimal Klirrfaktor.	
21	KLIRRFAKTOR(7)	(C) 98,0MHz Wähler: L 10kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B)	98,0MHz	VR9 (X86-)	Minimal Klirrfaktor.	
22	KLIRRFAKTOR(8) NARROW	(C) 98,0MHz Wähler: L 1kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B)	98,0MHz	VR2 (X86-)	Minimal Klirrfaktor.	
23	STEREO KANAL TRENNUNG(1) L	(C) 98,0MHz Wähler: R 1kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B) L	98,0MHz	VR4 (X05-)	Minimales Übersprechen.	
24	STEREO KANAL TRENNUNG(2) R	(C) 98,0MHz Wähler: L 1kHz,±40,0kHz Hub Pilotten:±6,00kHz HUB 80dBμ(ANT-Eingang)	(B) R	98,0MHz	VR3 (X05-)	Minimales Übersprechen.	
25	STEREO KANAL TRENNUNG(3) NARROW	(C) 98,0MHz Wähler: R 1kHz,±40,0kHz Hub Pilotten:±6,00kHz Hub 80dBμ(ANT-Eingang)	(B) L	98,0MHz	VR2 (X05-)	Minimales Übersprechen.	
26	HUBVERHÄLTNIS	–	–	REC CAL:ON	VR4 (X13-)	So positionieren, daß der 4. Punkt leuchtet.	(g)

KT-3300D


KT-3300D
75 Ω/300 Ω
Antenna adaptor
Adaptateur d'antenne
Antennenadapter
Dummy antenna
Antenna fictive
Kunstantenne
(A)
AG
FM-SG
(C)
AG
FM-MPX
FM-SG
(B)
AC voltmeter
Voltmètre CA
Klirrfaktormesser
Oscilloscope
Oscilloscope
Oszilloskop
Distortion meter
Distorsionmètre
Wechselspannungsmesser


SIGNAL
7
5
3
1
TUNING
MODULATION (%)
50
100
200

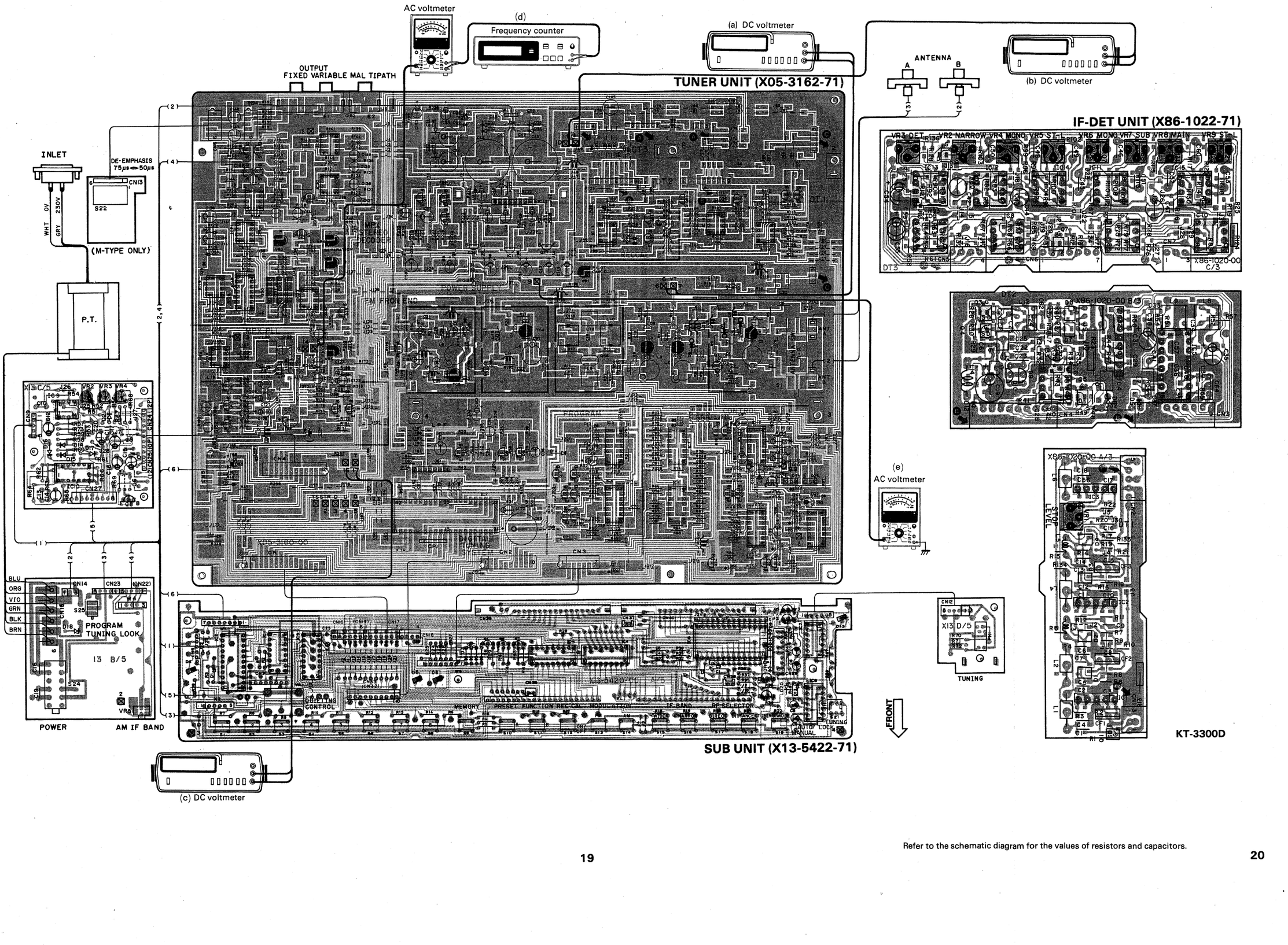
(f)


SIGNAL
7
5
3
1
TUNING
MODULATION (%)
50
100
200

(g)

PC BOARD

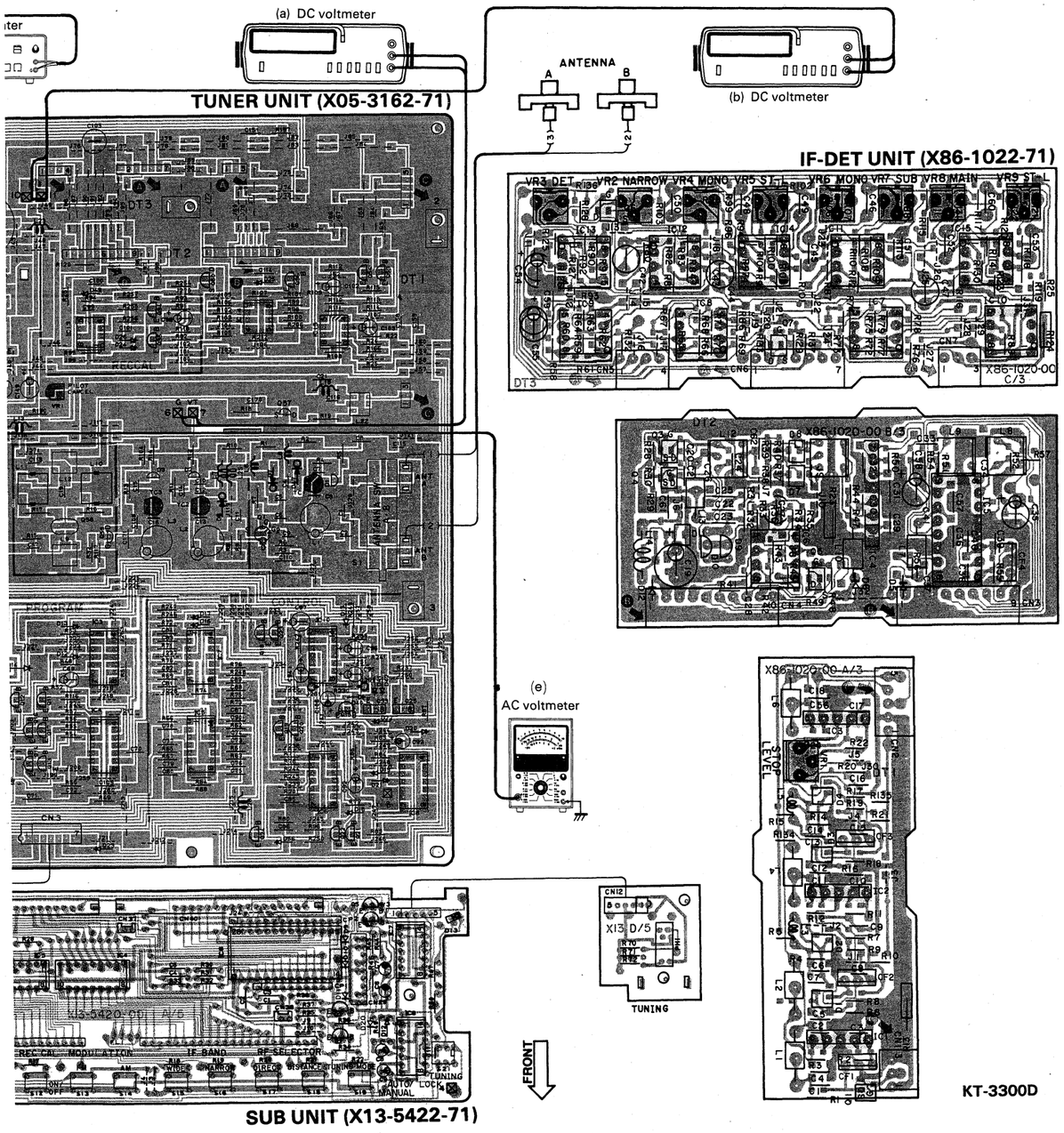
COMPONENT SIDE VIEW



Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD

COMPONENT SIDE VIEW



Refer to the schematic diagram for the values of resistors and capacitors.

(X05-3162-71)

	B	C	E
Q10	29.7V	11V	–
Q26	–	17.6V	14.5V
Q27	−15.1V	−21V	−14.6V
Q28	16.6V	–	17.5V
Q30	0V	–	–
Q34	–	REC CAL 14.3V (ON) 0V (OFF)	–
Q37	–	7.3V	1.9V
Q38	–	7.3V	3.0V
Q39	3.0V	15.5V	–
Q40	15.5V	–	–
Q41	–	17.4V (MONO) −14.4V (STEREO)	–
Q56	–	–	12.2V

	G_1	G_2	D	S
Q1	–	4.1V	11V	0V

	G	D	S
Q4	–	–	11.4V
Q5	4.0V	–	4.9V
Q7	0V	9.8V	–
Q8	–	29.4V	–
Q57	–	1.4V	12.2V
Q58	–	4.0V 12.3V	12.4V 4.0V
Q59	–	11.8V	–
Q60	–	–	REC CAL 7.3V (ON) 3.0V (OFF)

IC1

1	5.5V
3	0V
4	0V
5	3.9V
6	4V
7	2.6V

IC11

OUT	5.7V
GND	0.6V
IN	17.7V

IC14 (1/2 ~ 2/2)

1	12.9V (STOP) −13.0V (OFF)
5	29 (1.9)V

IC15 (2/2)

	WIDE	NARROW
5	2.3V	2.7V
6	4.9V	0V
7	−13.2V	13.3V

IC15 (1/2)

2	2.5V

IC17

2	0.9V
6	3.9V
17	2.3V
18	7.3V

IC16

1	7.9V
2	11.2V
3	−13.6V
4	11.5V
5	0V
6	0V
7	−14.5V
8	1.1V
9	13.6V
10	0V
11	0V
12	1.3V
13	−13.1V
14	11.2V

IC18

7	0V
8	7.3V

IC20

7	0V

IC22

8	14.5V

IC21 (1/2 ~ 2/2)

1	1.37V
6	0V
7	1.37V

IC24 (1/2 ~ 2/2)

3	0V
5	0V

(X86-1022-71) (B/3)

IC4

1	14.6V
2	13.7V
3	1.23V
4	0V
5	1.8V
6	7.3V
7	4.8V

IC5

1	2.9V
2	2.9V
3	1.23V
4	0V
5	0V
6	5.6V
7	5.1V
8	5.6V
9	5.6V
10	5.6V
11	5.6V
12	4.7V
13	0.6V
14	0V
15	5.2V
16	0V

IC6 (1/2)

2	7.3V
3	7.5V
8	14.6V

IC6 (2/2)

5	7.3V
6	7.3V
8	8.1V

(X86-1022-71) (A/3)

IC1

1	1.36V
2	1.36V
3	0V
4	12.4V
5	14.6V

IC2

1	1.36V
2	1.36V
3	0V
4	12.4V
5	14.6V

IC3

1	1.36V
2	1.36V
3	0V
4	13.6V
5	14.6V

(X86-1022-71) (C/3)

IC8

1	7.3V
2	7.3V
3	0V
4	7.3V
5	7.3V
6	7.3V
7	7.3V
8	7.3V

IC9

1	7.3V
2	7.3V
3	0V
4	7.3V
5	7.3V
6	7.3V
7	7.3V
8	7.3V

(X13-5422-71) (A/5)

IC1

2	16.5V
3	17.1V
4	1.2V
5	2V
6	3V
7	16.5V
9	16.5V
10	16.5V
11	16.5V
13	0V
14	16.5V
15	16.5V
16	16.5V

IC2

1	0V
2	0V
3	0V
9	12V
10	0V
12	17.1V
13	5.6V
14	1.3V
17	0V
18	0V
19	0V
20	0.1V
21	16.3V
22	0V

IC3

1	0V
2	6.5V
3	6.5V
4	7.1V
5–12	16.2V
13–16	0V
17	4.3V
18	17.1V

IC4

1–9	0V
10	17.1V
11–18	0V

IC5

2	2.2V
4	3.1V
9	0V
10	17.1V
15	16V
17	16V

IC6

1–4	0V
5	0.7V
6–7	16.1V
8	0.7V
9–13	16.1V
14	0V
15–20	16.1V
21	0.7V
22–27	16.1V
28	4.8V

IC7 (1/4 ~ 3/4)

1	7.3V
2	7.3V
3	0V
4	7.3V
5	7.3V
6	7.3V
8	7.3V

(X13-5422-71) (C/5)

IC9 (1/2 ~ 2/2)

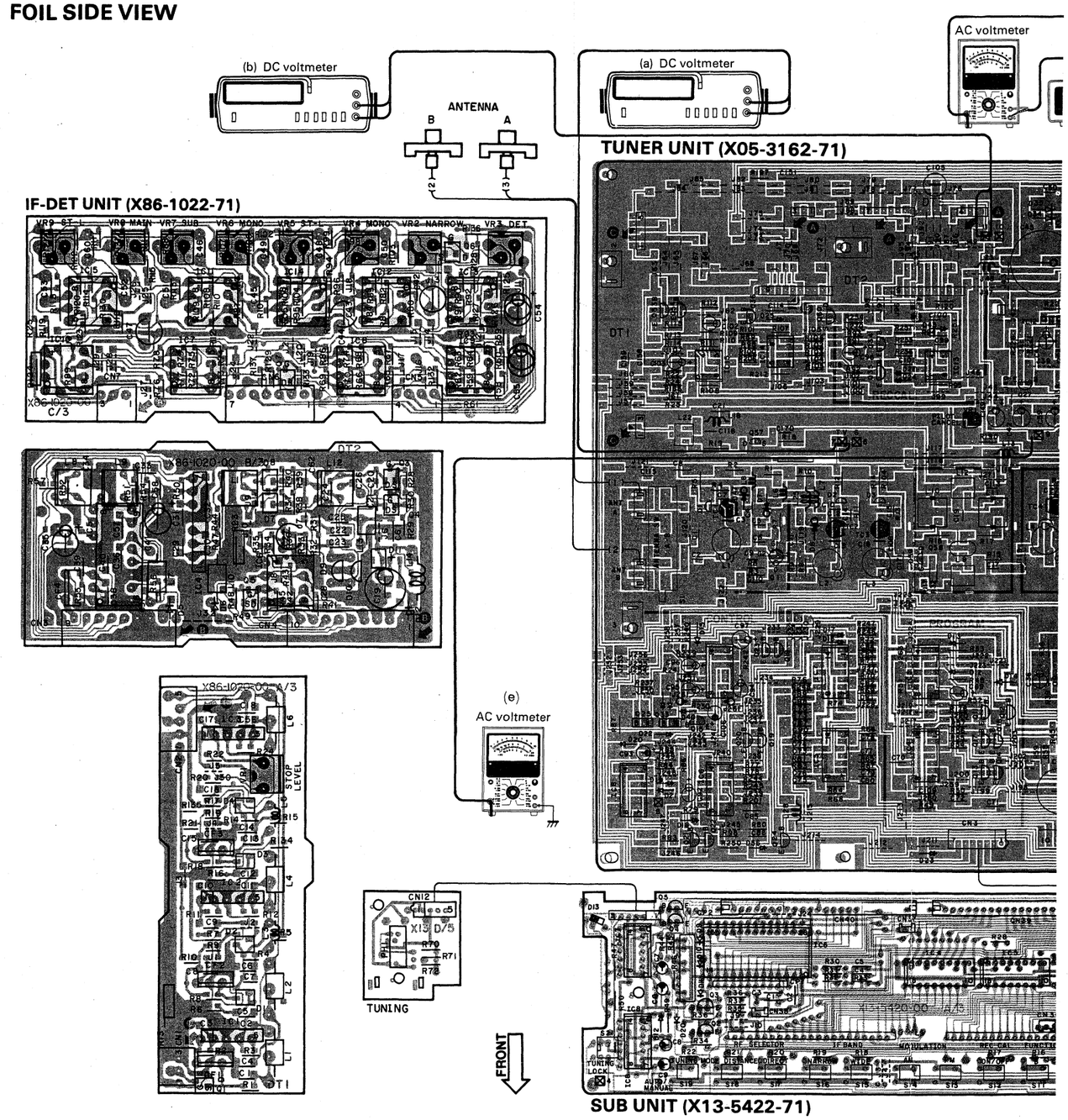
1	13V
2	0.9V
3	1.1V
4	0V
5	5.7V
6	5.5V
7	5.6V
8	14.9V

IC10 (1/4 ~ 4/4)

1	2.3V
2	0V
3	4.8V
4	0.2V
5	4.5V
7	0V
8	0V
9	0V
10	4.5–4.8V
11	4.8V
12	0V
14	4.8V

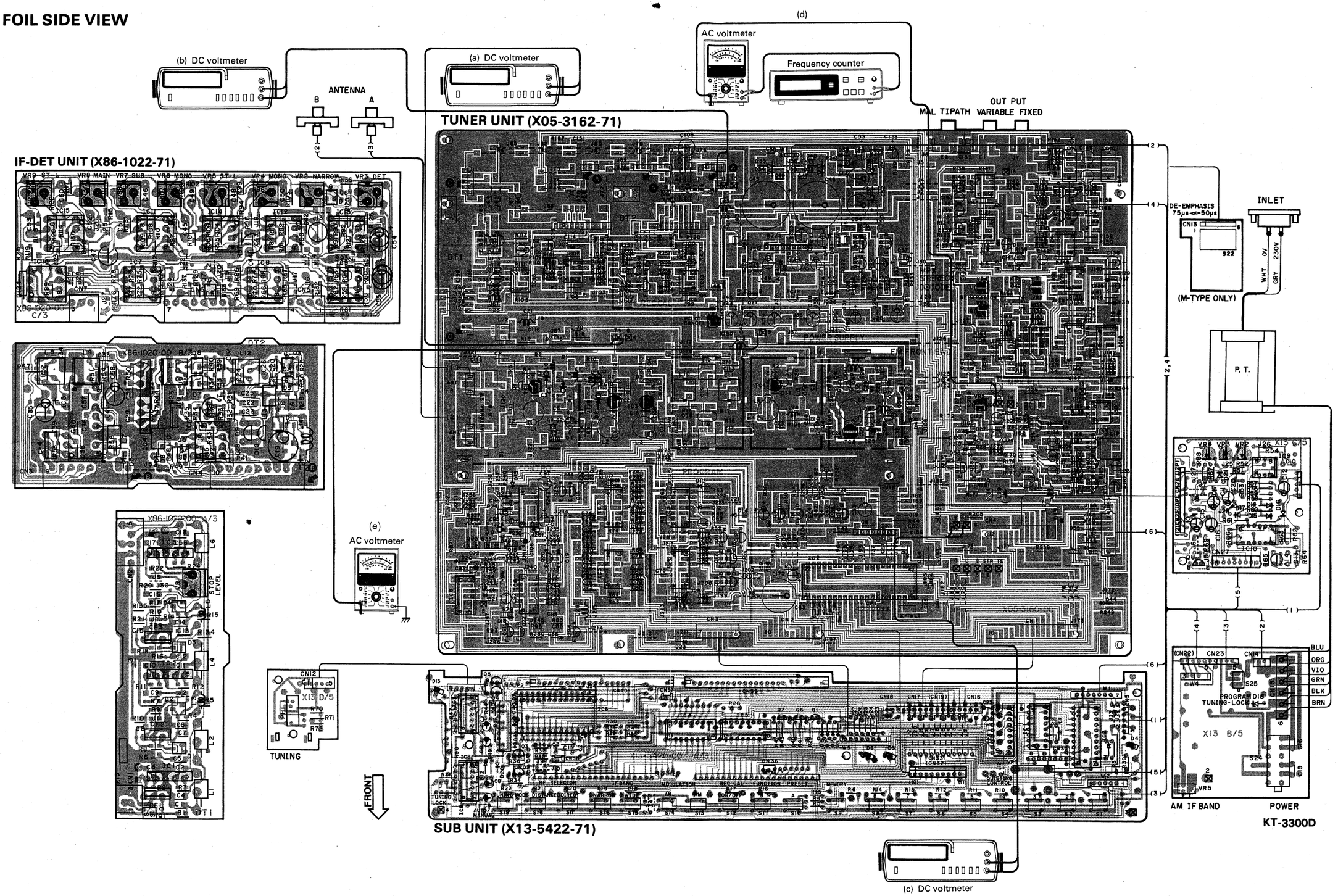
PC BOARD

FOIL SIDE VIEW



PC BOARD

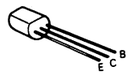
FOIL SIDE VIEW



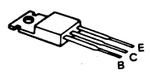
Refer to the schematic diagram for the values of resistors and capacitors.

(X05-3162-71)

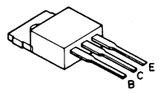
2SA733(A)
2SC2003
2SC945(A)
2SD863



MC1495L

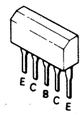


2SD1266

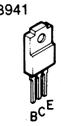


2SA937F
2SC2021F

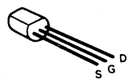
2SA995
2SC2291



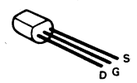
2SB941



2SK125
2SK125T
2SK246

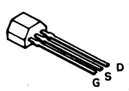


2SK364



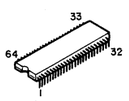
2SK122

2SK161
2SK241



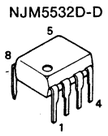
2SK211
2SK302

2SK425

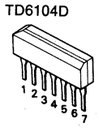


NJM4200D
NJM4560D

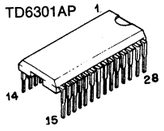
NJM5532D-D



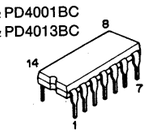
TD6104D



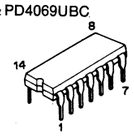
TD6301AP



μPD4001BC
μPD4013BC

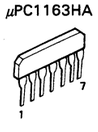


μPD4069UBC

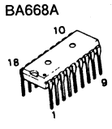


LA1231NS
LB1494

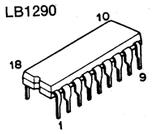
μPC1163HA



BA668A

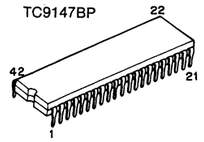


LB1290

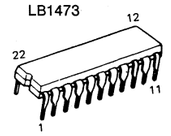


AN6562
M5218P

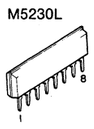
TC9147BP



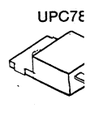
LB1473



M5230L

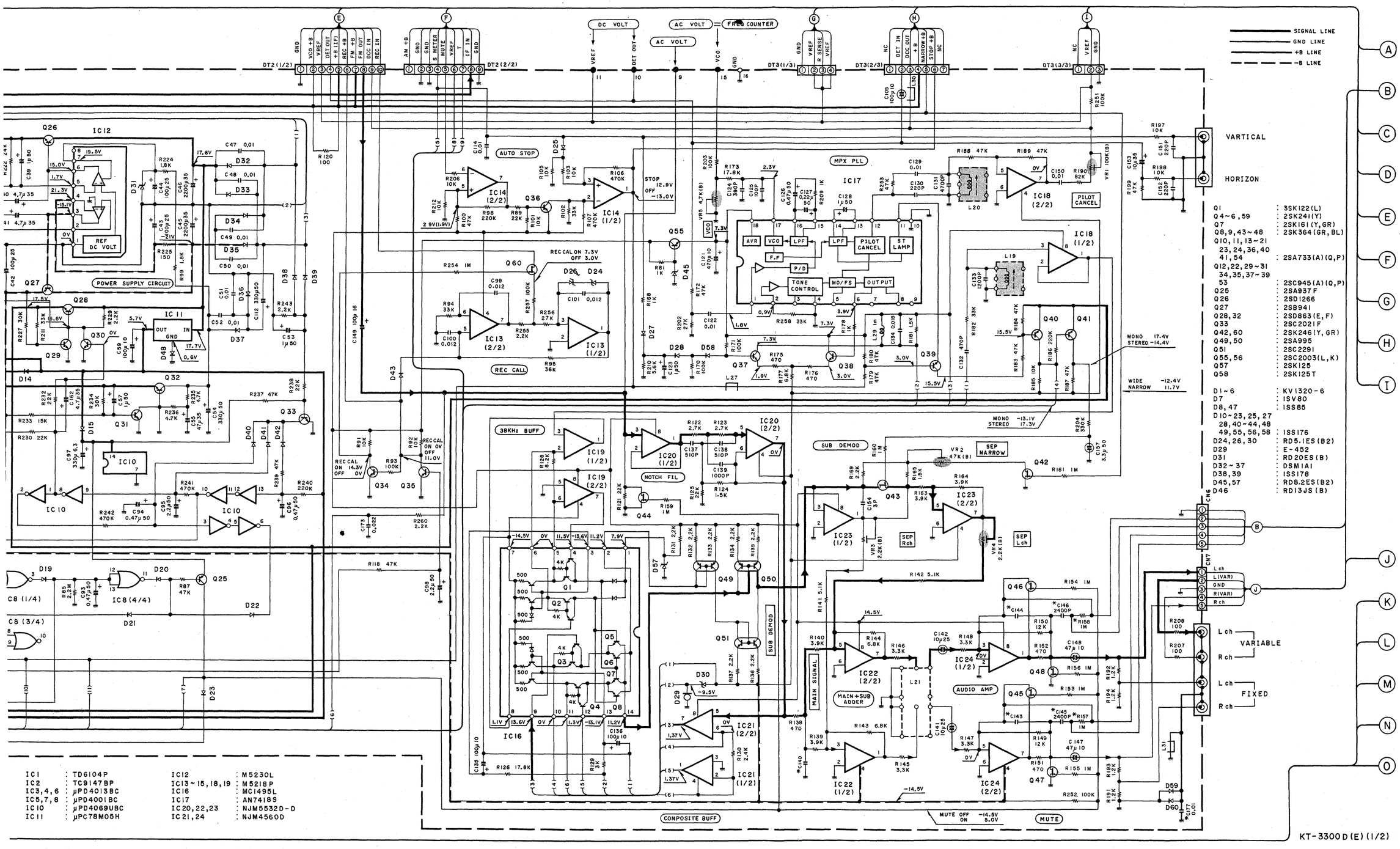


UPC7E



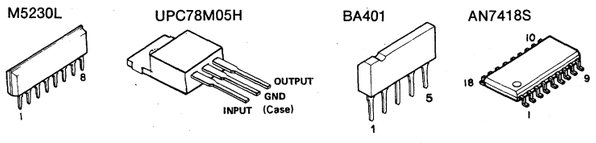
IC1 : TD6104P
IC2 : TC9147BP
IC3,4,6 : μPD4013BC
IC5,7,8 : μPD4001BC
IC10 : μPD4069UBC
IC11 : μPC78M05H

CN2 (X05-316-) DESTINATION	NO.	C140	C143 144	C145 146	C177	R157 158	R261	R270 271
E	2-71	1500P	3900P	NO	YES	NO	YES	NO
K	0-11	1000P	6200P	NO	NO	NO	NO	YES
M	0-21	1000P	3900P	YES	NO	YES	NO	NO



IC1	: TD6104P	IC12	: M5230L
IC2	: TC9147BP	IC13~15,18,19	: M5218P
IC3,4,6	: μPD4013BC	IC16	: MC1495L
IC5,7,8	: μPD4001BC	IC17	: AN7418S
IC10	: μPD4069UBC	IC20,22,23	: NJM5532D-D
IC11	: μPC78M05H	IC21,24	: NJM4560D

Q1	: 3SK122(L)
Q4~6,59	: 2SK241(Y)
Q7	: 2SK161(Y,GR)
Q8,9,43~48	: 2SK364(GR,BL)
Q10,11,13~21 23,24,36,40 41,54	: 2SA733(A)(Q,P)
Q12,22,29~31 34,35,37~39 53	: 2SC945(A)(Q,P)
Q25	: 2SA937F
Q26	: 2SD1266
Q27	: 2SB941
Q28,32	: 2SD863(E,F)
Q33	: 2SC2021F
Q42,60	: 2SK246(Y,GR)
Q49,50	: 2SA995
Q51	: 2SC2291
Q55,56	: 2SC2003(L,K)
Q57	: 2SK125
Q58	: 2SK125T
D1~6	: KV1320-6
D7	: 1SV80
D8,47	: 1SS85
D10~23,25,27 28,40~44,48 49,55,56,58	: 1SS176
D24,26,30	: RD5.1ES(B2)
D29	: E-452
D31	: RD20ES(B)
D32~37	: DSM1A1
D38,39	: 1SS178
D45,57	: RD8.2ES(B2)
D46	: RD13JS(B)



CAUTION: For continued safety, replace safety critical components only with manufacture's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before tha appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

KT-3300D (E) (1/2)

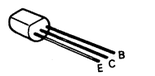
KT-3300D

KENWOOD

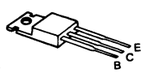
U V W X Y Z AA BB CC DD EE

A B C D E F G H I J K L M N O

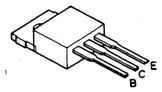
2SA733(A)
2SC2003
2SC945(A)
2SD863



MC1495L



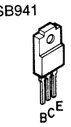
2SD1266

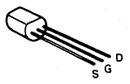


2SA937F
2SC2021F

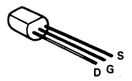
2SA995
2SC2291

2SB941

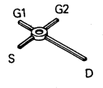




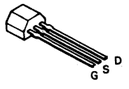
2SK364



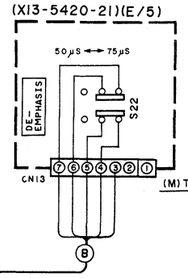
2SK122



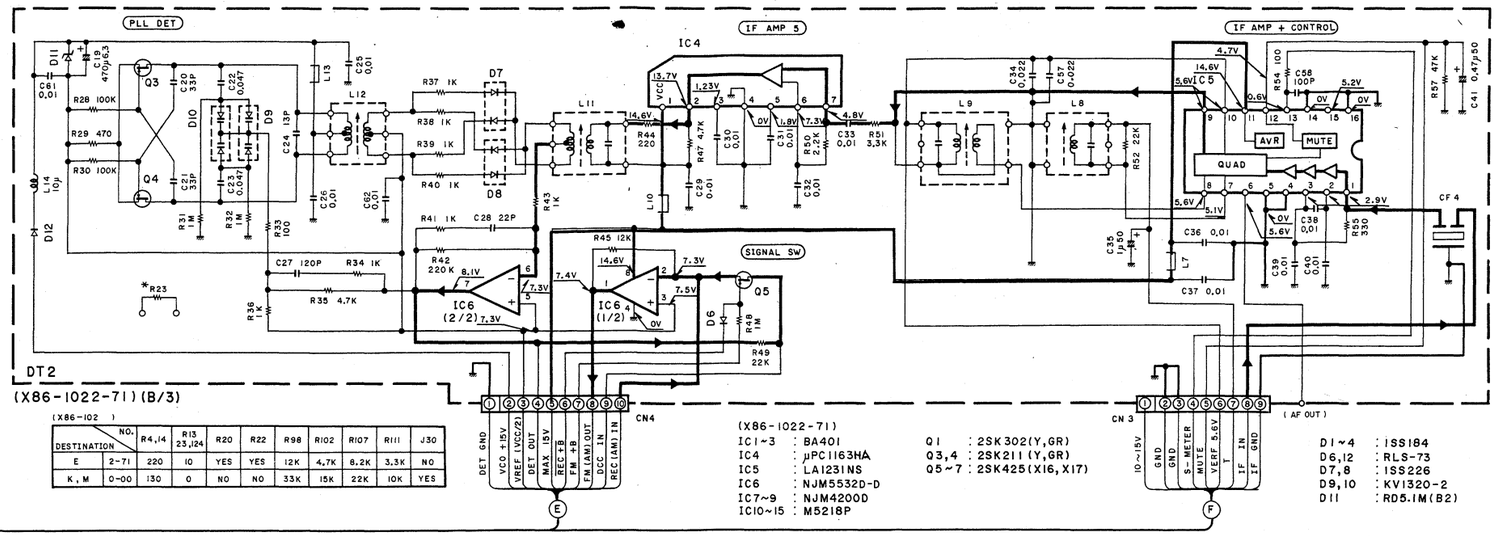
2SK161
2SK241



(X13-5420-21)(E/5)



(X86-1022-71)(B/3)



(X86-102)

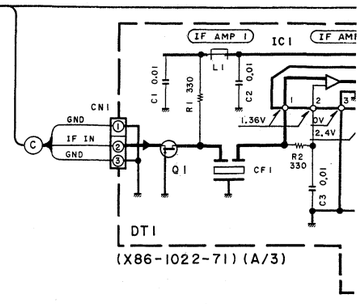
DESTINATION \ NO.	R4,14	R13 23,124	R20	R22	R98	R102	R107	R111	J30
E	2~7	220	10	YES	YES	12K	4.7K	8.2K	3.3K	NO
K, M	0~00	130	0	NO	NO	33K	15K	22K	10K	YES

(X86-1022-71)
IC1~3 : BA401
IC4 : μPC1163HA
IC5 : LA1231NS
IC6 : NJM5532D-D
IC7~9 : NJM4200D
IC10~15 : M5218P

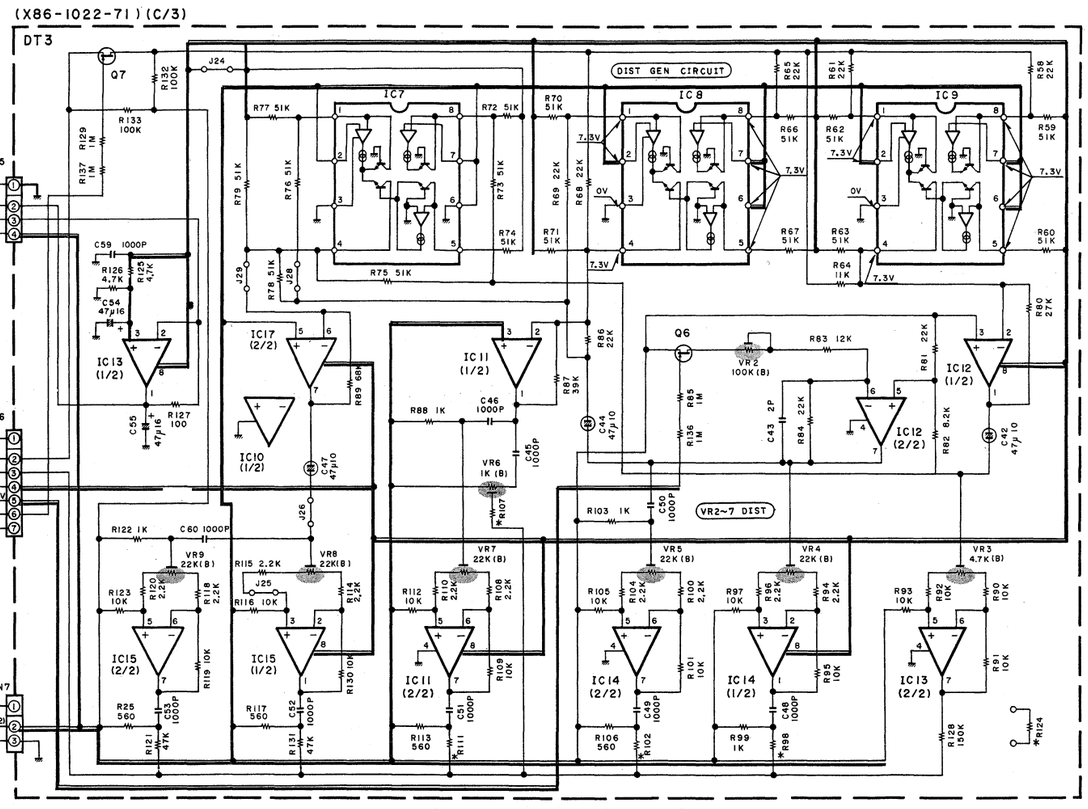
Q1 : 2SK302(Y,GR)
Q3,4 : 2SK211(Y,GR)
Q5~7 : 2SK425(X16,X17)

D1~4 : 1SS184
D6,12 : RLS-73
D7,8 : 1SS226
D9,10 : KV1320-2
D11 : RD5.1M(B2)

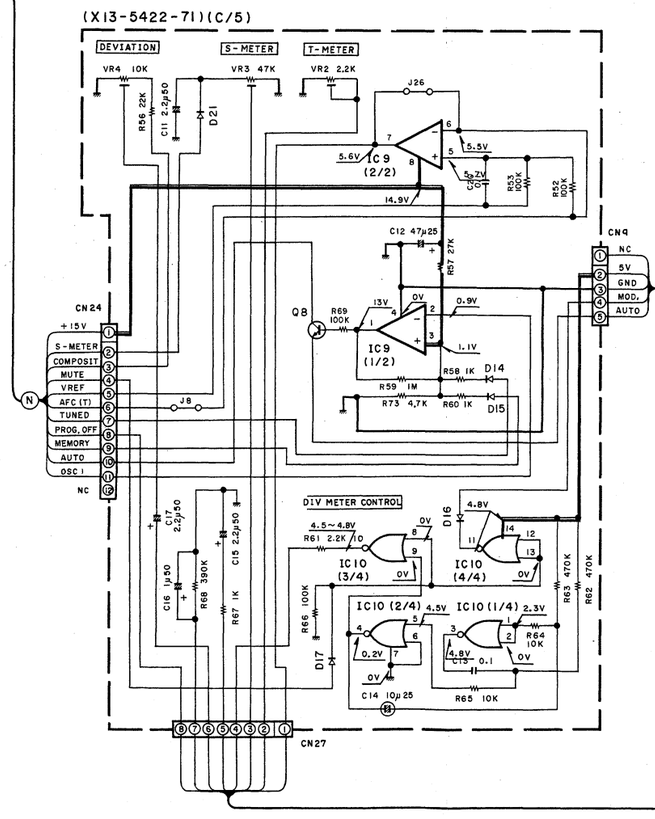
(X86-1022-71)(A/3)

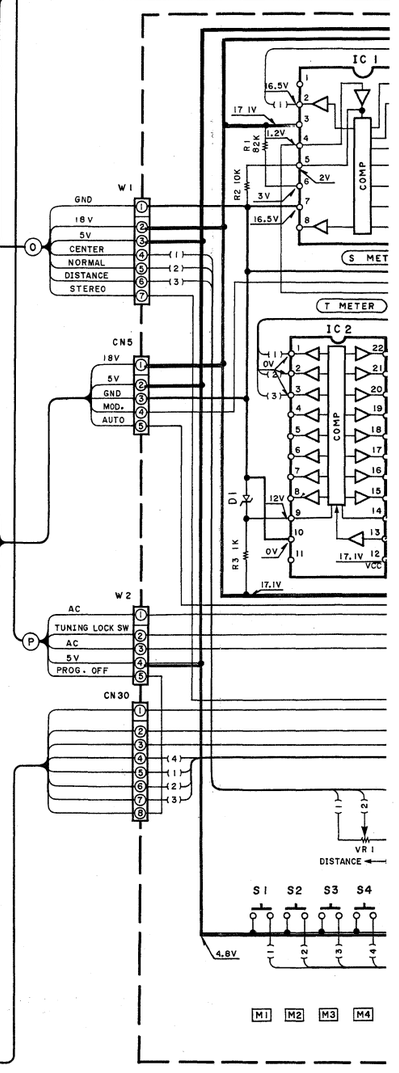


(X86-1022-71)(C/3)



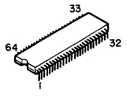
(X13-5422-71)(C/5)



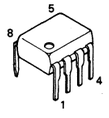


2SK211
2SK302

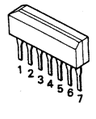
2SK425



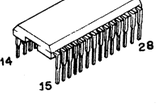
NJM4200D
NJM4560D
NJM5532D-D



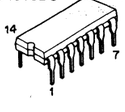
TD6104D



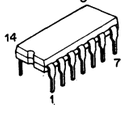
TD6301AP



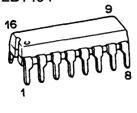
μPD4001BC
μPD4013BC



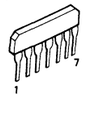
μPD4069UBC



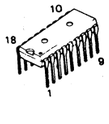
LA1231NS
LB1494



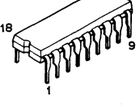
μPC1163HA



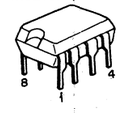
BA668A



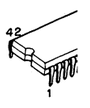
LB1290



AN6562
M5218P



TC9147E



(X13-5422-71)

IC 1	: LB1494	D1	: RD12ES(B2)
IC 2	: LB1473	D12,14~17, 20,21	: ISS133 or ISS176
IC 3	: BA668A	D4~6	: B30-1012-05
IC 4,5	: LB1290	D9~11	: B30-0431-05
IC 6	: TD6301AP	D18	: RD2.7ES(B) or HZS2.7N(B)
IC 7,10	: μPD4001BC		
IC 8	: μPD4013BC	PH 1	: T95-0024-05
IC 9	: AN6562	FL 1	: CP5185GR

Q2~8 : 2SC945(A)(Q,P)

IF AMP 1 · IF AMP 2 · WIDE 1 · IF AMP 3 · WIDE 2 · IF AMP 4 · NARROW 1 · NARROW 2 · AUTO STOP SENS · CN2 (MAX 15V, IF OUT, WIDE +15V, GND, NARROW +15V)

(X13-5422-71)(A/3)

CN22 · CN23 · CN14 · VR5 5K(B) · OUTPUT VR · PROGRAM TUNING LOCK · S25 · S24 · D18 · CN15 (BLU 19V, ORG 0V, VIOL 19V, GRN 2.15V, BLK 0V, BRN 2.15V) · POWER · INLET (230V, 0V, GRY, WHT)

(X13-5422-71)(B/5)

SIGNAL LINE · GND LINE · +B LINE

(X13-5422-71)(A/5)

IC1 · S METER · IC2 · T METER · IC3 · DIV METER · IC4 · IC5 · IC6 · FIP DRIVER · CN19 · CN32 · W5 · CP1 10K×9 · CP2 10K×13 · Q1~Q7 · D1~D3 · D9 UP · D10 DOWN · D11 AUTO · CN29 · TUNING AUTO · UP/DOWN CONTROL · IC7 (1/4)(2/4)(3/4)(4/4) · IC8 (1/2)(2/2) · D20 · D12 · S21 · OFF↔LOCK · D13

(K) TYPE

OUTLET UNSWITCHED 200W MAX. (RED, 120V, WHT, 0V)

(M) TYPE

INLET (230V, 115V, 0V, GRY, WHT, RED)

PHOTO BLOCK (X13-5422-71)(D/5)

PH 1 · W3 CN12 (GND, GND, 5V, STP/RUN, UP/DOWN)

VR1 DISTANCE ↔ NORMAL · QUIETING · PROGRAM (TUNING LOCK) · A · B · PRESET FUNCTION

S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16 S17 S18 S19

M1 M2 M3 M4 M5 M6 M7 M8 MEMORY · PRESET B · MODULATION ON · WIDE · DIRECT · AUTO/MANUAL · PRESET A · REC CAL · MODULATION OFF · NARROW · DISTANCE

FL1 display: DIRECT · WIDE · FM 10008 MHz · DISTANCE · NARROW · AM 10008 KHz · PRESET STATIONS · STEREO · MEMORY · REC CAL · MUTING · 1 2 3 4 5 6 7 8

CAUTION: For continued safety, replace safety critical components only with manufacture's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before tha appliance is returned to the customer.

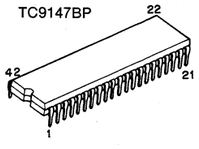
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

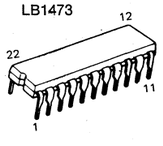
KT-3300D(E)(2/2)

6562 · 218P

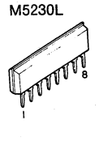
TC9147BP



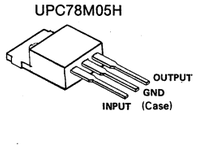
LB1473



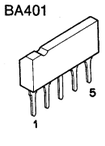
M5230L



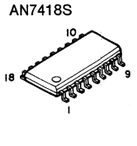
UPC78M05H



BA401



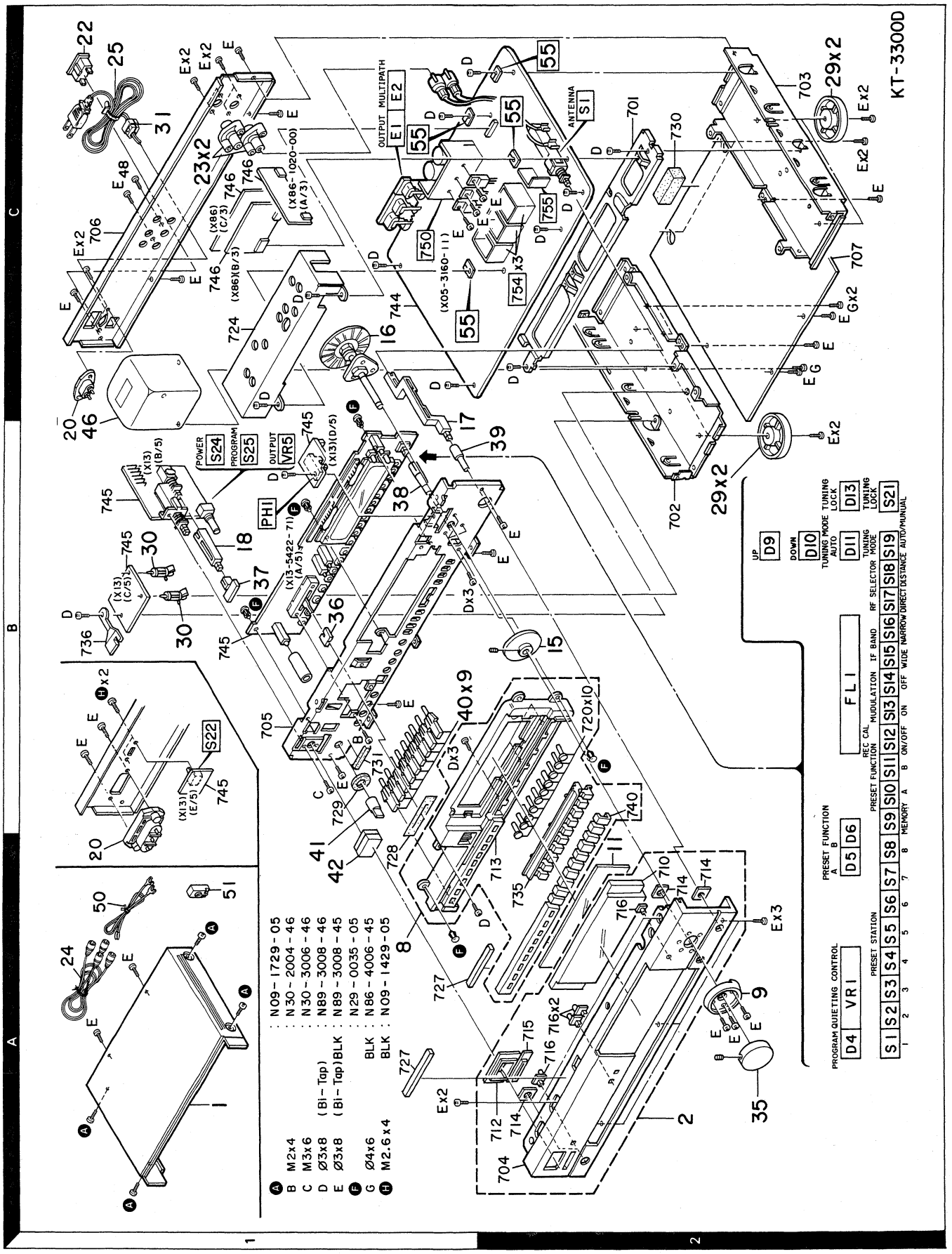
AN7418S



DC voltages are as measured with a high impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units.

KT-3300D
KENWOOD

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

KT-3300D

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
				KT-3300D			
	1	1A	*	A01-1503-01	METALLIC CABINET		
	2	2A	*	A20-4951-02	PANEL ASSY		
	8	1A	*	B07-1482-02	ESCUTCHEON ASSY		
	9	2A	*	B07-1487-04	ESCUTCHEON (TUNING KNOB)		
	11	2A	*	B11-0135-04	COLOR FILTER		
	-			B46-0092-03	WARRANTY CARD	K	
	-			B46-0122-13	WARRANTY CARD	E	
	-		*	B50-6367-00	INSTRUCTION MANUAL(ENGLISH)		
	-		*	B50-6368-00	INSTRUCTION MANUAL(FRENCH)	ME	
	-		*	B50-6369-00	INSTRUCTION MANUAL(SPANISH)	M	
	-		*	B50-6370-00	INSTRUCTION MANUAL(G,D,I)	E	
	-			B58-0269-04	CAUTION CARD	K	
	-			B58-0803-03	CAUTION CARD	E	
	15	2B		D01-0054-04	FLYWHEEL (TUNING)		
	16	1C	*	D20-0177-03	DIAL SHAFT ASSY		
	17	1B	*	D21-1142-04	EXTENSION SHAFT(ANTENNA)		
	18	1B	*	D21-1144-04	EXTENSION SHAFT(PROGRAM)		
⚠	20	1B		E03-0047-05	AC INLET	E	
⚠	20	1C		E03-0102-25	AC INLET	M	
⚠	22	1C		E03-0041-05	AC OUTLET	K	
	23	1C		E04-0006-05	RF COAXIAL CABLE RECEPTACLE		
	24	1B		E30-0505-05	AUDIO CORD		
⚠	25	1C		E30-0974-05	AC POWER CORD	K	
⚠	25	1C		E30-1305-15	AC POWER CORD (INLET)	M	
⚠	25	1C		E30-1329-05	AC POWER CORD (INLET)	E	
	-		*	H01-7283-04	ITEM CARTON CASE		
	-		*	H10-3398-02	POLYSTYRENE FOAMED FIXTURE		
	-		*	H10-3399-02	POLYSTYRENE FOAMED FIXTURE		
	-		*	H12-1146-14	PACKING FIXTURE		
	-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
	-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
	-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
	29	2B,2C	*	J02-0190-05	FOOT		
	30	1B		J19-0514-05	UNIT HOLDER		
⚠	31	1C		J42-0083-05	POWER CORD BUSHING	K	
	-			J61-0307-05	WIRE BAND		
	35	2A		K21-0405-04	KNOB (TUNING)		
	36	1B		K27-1292-04	KNOB (BUTTON) QUIETING CONTROL		
	37	1B		K27-1514-04	KNOB (BUTTON) PROGRAM		
	38	1B	*	K27-1662-04	KNOB (BUTTON) TUNING LOCK		
	39	2B	*	K27-1666-04	KNOB (BUTTON) ANTENNA		
	40	1B		K29-1588-04	KNOB (BUTTON) PRESET,MEMORY		
	41	1A		K29-2201-04	KNOB (OUTPUT VR)		
	42	1A		K29-2432-03	KNOB ASSY(BUTTON)POWER		
⚠	46	1B	*	L01-7271-05	POWER TRANSFORMER	K	
⚠	46	1B	*	L01-7272-05	POWER TRANSFORMER	E	
⚠	46	1B	*	L01-7274-05	POWER TRANSFORMER	M	
	48	1C		N09-0292-05	STEPPED SCREW (Ø3X19) GND		
	A	1A		N09-1729-05	TAPTITE SCREW (CASE)		
	F	1B,2B		N29-0035-05	PUSH RIVET (3.5X5.5)		

E: Scandinavia & Europe **K**: USA **P**: Canada **W**:Europe
U: PX(Far East, Hawaii) **T**: England **M**: Other Areas
UE: AAFES(Europe) **X**: Australia

⚠ indicates safety critical components.

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
H	1C		N09-1429-05	MACHINE SCREW (M2.6X4)SLIDE			M	
R1			R92-0173-05	RC	2.2M	M 1/2W	K	
50	1A		T90-0132-05	T TYPE ANTENNA				
51	1A		T90-0136-05	ANTENNA ADAPTOR				
TUNER UNIT (X05-3162-71)								
C2			CC45FSL1H390J	CERAMIC	39PF	J		
C4			CC45FSL1H010C	CERAMIC	1.0PF	C		
C5			CC45FSL1H020C	CERAMIC	2.0PF	C		
C6			CC45FSL1H100D	CERAMIC	10PF	D		
C7			CC45FCH1H330J	CERAMIC	33PF	J		
C8			C91-0769-05	CERAMIC	0.01UF	M		
C9			CK45FB1H102K	CERAMIC	0.0H10UF	K		
C10			CC45FSL1H020C	CERAMIC	2.0PF	C		
C11			CK45FF1H103Z	CERAMIC	0.H10UF	Z		
C12			CC45FSL1H010C	CERAMIC	1.0PF	C		
C13			CC45FTH1H050C	CERAMIC	5.0PF	C		
C14 ,15			CC45FCH1H330J	CERAMIC	33PF	J		
C16			CC45FTH1H050C	CERAMIC	5.0PF	C		
C17			CK45FB1H102K	CERAMIC	0.0H10UF	K		
C18 -20			CK45FF1H103Z	CERAMIC	0.H10UF	Z		
C21			C91-0769-05	CERAMIC	0.01UF	M		
C22			CC45FCH1H330J	CERAMIC	33PF	J		
C23			CC45FSL1H101J	CERAMIC	100PF	J		
C24			CC45FSL1H030C	CERAMIC	3.0PF	C		
C25		*	CC45FTH1H330J	CERAMIC	33PF	J		
C28			CC45FTH1H120J	CERAMIC	12PF	J		
C29 ,30			CC45FCH1H150J	CERAMIC	15PF	J		
C31			CC45FSL1H030C	CERAMIC	3.0PF	C		
C32			C91-0737-05	CERAMIC	47PF	J		
C33			CE04KW1V470M	ELECTRO	47UF	35WV		
C34			CF92FV1H223J	MF	0.022UF	J		
C35			C90-1331-05	NP-ELEC	0.47UF	50WV		
C36			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C37			CC45FTH1H050C	CERAMIC	5.0PF	C		
C38			CE04KW1E101M	ELECTRO	100UF	25WV		
C39			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C40 ,41			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C42 -44			CE04KW1E101M	ELECTRO	100UF	25WV		
C45 ,46		*	C90-1415-15	ELECTRO	2200UF	35WV		
C47 -52			CK45FF1H103Z	CERAMIC	0.H10UF	Z		
C53			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C54			CE04KW1H331M	ELECTRO	330UF	50WV		
C55 ,56			CE04KW1V470M	ELECTRO	47UF	35WV		
C57			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C59			CE04KW1A101M	ELECTRO	100UF	10WV		
C61			C91-0769-05	CERAMIC	0.01UF	M		
C62			C91-0761-05	CERAMIC	0.0022UF	M		
C63		*	C90-1416-05	ELECTRO	18UF	5.5WV		
C64			C91-0769-05	CERAMIC	0.01UF	M		
C65 ,66			CC45FCH1H330J	CERAMIC	33PF	J		
C67			C91-0769-05	CERAMIC	0.01UF	M		
C69			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C70 -90			C91-0769-05	CERAMIC	0.01UF	M		

E: Scandinavia & Europe K: USA P: Canada W: Europe
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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格		Destination 仕向	Remarks 備考
C92			CE04KW1V4R7M	ELECTRO	4.7UF 35WV		
C93			CE04JW1HR47M	ELECTRO	0.47UF 50WV		
C94			CE04KW1HR47M	ELECTRO	0.47UF 50WV		
C95			CE04KW1H2R2M	ELECTRO	2.2UF 50WV		
C96			CE04KW1HR47M	ELECTRO	0.47UF 50WV		
C97			CE04KW0J331M	ELECTRO	330UF 6.3WV		
C98			CE04KW1H2R2M	ELECTRO	2.2UF 50WV		
C99 -101			CF92FV1H123J	MF	0.012UF J		
C102,103			CE04KW1HR22M	ELECTRO	0.22UF 50WV		
C104			C91-0757-05	CERAMIC	0.001UF K		
C105		*	C90-1499-05	NP-ELEC	100UF 10WV		
C106			CE04JW1C4R7M	ELECTRO	4.7UF 16WV		
C108			CC45FSL1H050C	CERAMIC	5.0PF C		
C109,110			C91-0769-05	CERAMIC	0.01UF M		
C112			CE04KW1H331M	ELECTRO	330UF 50WV		
C113			CK45FF1H103Z	CERAMIC	0.H10UF Z		
C114			C91-0769-05	CERAMIC	0.01UF M		
C115,116			CK45FF1H103Z	CERAMIC	0.H10UF Z		
C121			CE04KW1A471M	ELECTRO	470UF 10WV		
C122			CF92FV1H103J	MF	0.010UF J		
C123			CE04KW1H010M	ELECTRO	1.0UF 50WV		
C124			CQ09FS1H391JY0	POLYSTY	390PF J		
C125			CQ09FS1H101JY0	POLYSTY	100PF J		
C126			CE04GW1HR47M	LL-ELEC	0.47UF 50WV		
C127			CE04GW1HR22M	LL-ELEC	0.22UF 50WV		
C128			CE04GW1H010M	LL-ELEC	1.0UF 50WV		
C129			C91-0769-05	CERAMIC	0.01UF M		
C130			C91-0749-05	CERAMIC	220PF K		
C131			CQ09FS1H472J	POLYSTY	4700PF J		
C132			CQ09FS1H471J	POLYSTY	470PF J		
C133			CQ09FS1H122J	POLYSTY	1200PF J		
C134			CF92FV1H183J	MF	0.018UF J		
C135,136			CE04KW1A101M	ELECTRO	100UF 10WV		
C137,138			CQ09FS1H511J	POLYSTY	510PF J		
C139			CQ09FS1H102J	POLYSTY	1000PF J		
C140			CQ09FS1H102J	POLYSTY	1000PF J	MK	
C140			CQ09FS1H152J	POLYSTY	1500PF J	E	
C141,142			C90-1333-05	NP-ELEC	10UF 25WV		
C143,144			CF92FV1H392J	MF	3900PF J	ME	
C143,144		*	CF92FV1H622J	MF	6200PF J	K	
C145,146			CF92FV1H242J	MF	2400PF J	M	
C147,148			C90-1334-05	NP-ELEC	47UF 10WV		
C149			CE04KW1C101M	ELECTRO	100UF 16WV		
C150			CF92FV1H103J	MF	0.010UF J		
C151,152			C91-0749-05	CERAMIC	220PF K		
C153			CE04KW1V100M	ELECTRO	10UF 35WV		
C154			CC45FSL1H030C	CERAMIC	3.0PF C		
C156			CC45FSL1H220J	CERAMIC	22PF J		
C157		*	C90-1351-05	NP-ELEC	3.3UF 50WV		
C158,159			CK45FF1H103Z	CERAMIC	0.H10UF Z		
C160			CE04KW1H2R2M	ELECTRO	2.2UF 50WV		
C161			CE04KW1H2R2M	ELECTRO	2.2UF 50WV		
C162			CE04KW1V4R7M	ELECTRO	4.7UF 35WV		
C170			CK45FF1H103Z	CERAMIC	0.H10UF Z		
C171			C91-0769-05	CERAMIC	0.01UF M		

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C172			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C173			CF92FV1H223J	MF 0.022UF J		
C175			CK45FB1H102K	CERAMIC 0.0H10UF K		
C176			CC45FSL1H020C	CERAMIC 2.0PF C		
C177			CK45FF1H103Z	CERAMIC 0.H10UF Z	E	
TC1 -5			C05-0302-05	CERAMIC TRIMMER CAPACITOR(11PF		
55	1C,2C		E23-0149-05	TERMINAL		
E1	1C		E13-0441-05	PHONO JACK (4P)OUTPUT		
E2	1C		E13-0217-05	PHONO JACK (2P)MULTIPATH		
-			L77-0578-05	CRYSTAL RESONATOR(7.2MHZ)		
L1		*	L31-0545-05	FM-RF COIL		
L2		*	L31-0546-05	FM-RF COIL		
L3		*	L31-0545-05	FM-RF COIL		
L4			L31-0501-05	FM-RF COIL		
L5			L32-0270-05	FM OSCILLATING COIL		
L6			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L7			L40-1092-14	SMALL FIXED INDUCTOR(1.0UH,M)		
L8			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L9			L39-0098-05	MATCHING COIL		
L10 ,11			L30-0381-05	FM IFT		
L12			L39-0098-05	MATCHING COIL		
L13		*	L92-0017-05	FERRITE CORE		
L14			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L15		*	L92-0017-05	FERRITE CORE		
L16			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L17			L40-1001-14	SMALL FIXED INDUCTOR(10UH,K)		
L18		*	L92-0017-05	FERRITE CORE		
L19 ,20			L35-0059-05	MPX COIL		
L21		*	L79-0728-05	LC FILTER		
L22			L30-0434-05	FM IFT		
L23 -25		*	L92-0017-05	FERRITE CORE		
L27 ,28		*	L92-0017-05	FERRITE CORE		
L29			L39-0143-05	PEAKING COIL		
L30 ,31		*	L92-0017-05	FERRITE CORE		
CP1			R90-0545-05	COMPOSITE ELEMENTS		
R16 ,17			RD14GB2E470J	FL-PROOF RD 47 J 1/4W	EK	
R19			RD14GB2E220J	FL-PROOF RD 22 J 1/4W	EK	
R23			RD14GB2E101J	FL-PROOF RD 100 J 1/4W	EK	
R43			RD14GB2E220J	FL-PROOF RD 22 J 1/4W	EK	
R126			RN14BK2C1782F	RN 17.8K F 1/6W		
R173			RN14BK2C1782F	RN 17.8K F 1/6W		
R225			RD14GB2E151J	FL-PROOF RD 150 J 1/4W	EK	
R270,271			RC05GF2H185M	RC 1.8M M 1/2W	K	
VR1			R12-5046-05	TRIMMING POT.(100K)PILOT CANS		
VR2			R12-3099-05	TRIMMING POT.(47K)NALLOW		
VR3 ,4			R12-1067-05	TRIMMING POT.(2.2K)SEPARATION		
VR5			R12-1069-05	TRIMMING POT.(4.7K)VCO		
S1	2C	*	S40-6024-05	PUSH SWITCH (ANTENNA)		
D1 -5			KV1320-5	VARIABLE CAPACITANCE DIODE		
D7			1SV80	DIODE		
D8			1SS85	DIODE		
D10 -23			1SS176	DIODE		
D24			RD5.1ES(B2)	ZENER DIODE		

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D25			1SS176	DIODE		
D26			RD5.1ES(B2)	ZENER DIODE		
D27 ,28			1SS176	DIODE		
D29		*	E-452	CONSTANT CURRENT DIODE		
D30			RD5.1ES(B2)	ZENER DIODE		
D31		*	RD20ES(B)	ZENER DIODE		
D32 -37			DSM1A1	DIODE		
D38 ,39			1SS178	DIODE		
D40 -44			1SS176	DIODE		
D45			RD8.2ES(B2)	ZENER DIODE		
D46			RD13JS(B)	ZENER DIODE		
D47			1SS85	DIODE		
D48 ,49			1SS176	DIODE		
D55 ,56			1SS176	DIODE		
D57			RD8.2ES(B2)	ZENER DIODE		
D58 -60			1SS176	DIODE		
IC1			TD6104P	IC(PRE SCALER)		
IC2			TC9147BP	IC(DIGITAL TUNING SYSTEM)		
IC3 ,4			UPD4013BC	IC(D FLIP-FLOP X2)		
IC5			UPD4001BC	IC(NOR X6)		
IC6			UPD4013BC	IC(D FLIP-FLOP X2)		
IC7 ,8			UPD4001BC	IC(NOR X6)		
IC10			UPD4069UBC	IC(INVERTER X6)		
IC11			UPC78M05H	IC(VOLTAGE REGULATOR/ +5V)		
IC12		*	M5230L	IC(VOLTAGE REGULATOR)		
IC13-15			M5218P	IC(OP AMP X2)		
IC16		*	MC1495L	IC(MULTIPLIER)		
IC17			AN7418S	IC(FM MPX)		
IC18,19			M5218P	IC(OP AMP X2)		
IC20			NJM5532D-D	IC(OP AMP X2)		
IC21			NJM4560D	IC(OP AMP X2)		
IC22,23			NJM5532D-D	IC(OP AMP X2)		
IC24			NJM4560D	IC(OP AMP X2)		
Q1		*	3SK122(L)	FET		
Q4 -6			2SK241(Y)	FET		
Q7			2SK161(Y,GR)	FET		
Q8 ,9			2SK364(GR,BL)	FET		
Q10 ,11			2SA733(A)(Q,P)	TRANSISTOR		
Q12			2SC945(A)(Q,P)	TRANSISTOR		
Q13 -21			2SA733(A)(Q,P)	TRANSISTOR		
Q22			2SC945(A)(Q,P)	TRANSISTOR		
Q23 ,24			2SA733(A)(Q,P)	TRANSISTOR		
Q25			2SA937F	TRANSISTOR		
Q26			2SD1266	TRANSISTOR		
Q27			2SB941	TRANSISTOR		
Q28			2SD863(E,F)	TRANSISTOR		
Q29 -31			2SC945(A)(Q,P)	TRANSISTOR		
Q32			2SD863(E,F)	TRANSISTOR		
Q33			2SC2021F	TRANSISTOR		
Q34 ,35			2SC945(A)(Q,P)	TRANSISTOR		
Q36			2SA733(A)(Q,P)	TRANSISTOR		
Q37 -39			2SC945(A)(Q,P)	TRANSISTOR		
Q40 ,41			2SA733(A)(Q,P)	TRANSISTOR		
Q42			2SK246(Y,GR)	FET		
Q43 -48			2SK364(GR,BL)	FET		

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Q49 ,50			2SA995	DUAL TRANSISTOR		
Q51			2SC2291	DUAL TRANSISTOR		
Q53			2SC945(A)(Q,P)	TRANSISTOR		
Q54			2SA733(A)(Q,P)	TRANSISTOR		
Q55 ,56			2SC2003(L,K)	TRANSISTOR		
Q57			2SK125	FET		
Q58			2SK125T	DUAL FET		
Q59			2SK241(Y)	FET		
Q60			2SK246(Y,GR)	FET		
SUB-CIRCUIT UNIT (X13-5422-71)						
D4 -6	2A		B30-1012-05	LED(SLP-981C-50)PROG,PRE FUNC		
D9 -11	2B		B30-0431-05	LED(LN21CPH)UP/DOWN,TUN MODE		
D13	2B		B30-1012-05	LED(SLP-981C-50)TUNING LOCK		
C1 -3			C91-0757-05	CERAMIC 0.001UF K		
C4 ,5			C91-0769-05	CERAMIC 0.01UF M		
C6 ,7		*	C90-0496-05	ELECTRO 100UF 6.3WV		
C8			C90-0482-05	ELECTRO 4.7UF 25WV		
C9			C90-0822-05	ELECTRO 47UF 16WV		
C11			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C12			CE04KW1E470M	ELECTRO 47UF 25WV		
C13			CF92FV1H104J	MF 0.10UF J		
C14			C90-1332-05	NP-ELEC 10UF 25WV		
C15			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C16			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C17			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C18 -20			CF92FV1H104J	MF 0.10UF J		
CP1			R90-0441-05	MULTI-COMP 10KX9 J 1/6W		
CP2			R90-0416-05	MULTI-COMP 10KX13 J 1/6W		
VR1	2A	*	R13-3040-05	POTENTIOMETER(QUIETING CONTROL		
VR2			R12-1067-05	TRIMMING POT.(2.2K)T-METER		
VR3			R12-3099-05	TRIMMING POT.(47K) S-METER		
VR4			R12-3096-05	TRIMMING POT.(10K) DEVIETION		
VR5	1B	*	R10-9002-05	POTENTIOMETER(OUTPUT VR)		
S1 -19	2A,2B		S40-1064-05	PUSH SWITCH (PRESET STATIONS)		
S21	2B		S40-2323-05	PUSH SWITCH (TUNING LOCK)		
S22			S31-2072-05	SLIDE SWITCH (DE-EMPHASIS)	M	
S24	1B		S40-4061-05	PUSH SWITCH (POWER)		
S25	1B		S40-2193-05	PUSH SWITCH (PROGRAM)		
PH1	1B		T95-0024-05	OPTO ISOLATOR		
D1		*	RD12ES(B2)	DIODE		
D12			1SS133	DIODE		
D12			1SS176	DIODE		
D14 -17			1SS133	DIODE		
D14 -17			1SS176	DIODE		
D18			HZS2.7N(B)	ZENER DIODE		
D18			RD2.7ES(B)	ZENER DIODE		
D20 ,21			1SS133	DIODE		
D20 ,21			1SS176	DIODE		
FL1	2B		CP5185GR	FLUORESCENT INDICATOR TUBE		
IC1		*	LB1494	IC(DC LEVEL METER)		
IC2			LB1473	IC(1 OF 16PT LED DRIVER)		
IC3			BA668A	IC(12PT FL PEAK LEVEL METER DR		
IC4 ,5			LB1290	IC(8CH TRANSISTOR ARRAY)		

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IC6			TD6301AP	IC(FL/LED/LCD FREQ DISPLAY DR)		
IC7			UPD4001BC	IC(NOR X6)		
IC8			UPD4013BC	IC(D FLIP-FLOP X2)		
IC9			AN6562	IC(OP AMP X2)		
IC10			UPD4001BC	IC(NOR X6)		
Q2 -5			2SC945(A)(Q,P)	TRANSISTOR		
Q6 ,7			2SC945(A)(Q,P)	TRANSISTOR		
Q8			2SC945(A)(Q,P)	TRANSISTOR		
IF-DET UNIT (X86-1022-71)						
C1 -6		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C7		*	CK41FB1H221K	CYLND CHIP C 220PF K		
C8 -12		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C13		*	CK41FB1H221K	CYLND CHIP C 220PF K		
C14 -18		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C19			CE04KW0J471M	ELECTRO 470UF 6.3WV		
C20 ,21		*	CC41FSL1H330J	CYLND CHIP C 33PF J		
C22 ,23			CK73EB1E473K	CHIP C 0.047UF K		
C24		*	CC41FUJ1H130J	CYLND CHIP C 13PF J		
C25 ,26		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C27			CQ09FS1H121J	POLYSTY 120PF J		
C28		*	CC41FSL1H220J	CYLND CHIP C 22PF J		
C29 -33		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C34		*	C93-0013-05	CERAMIC 22000PF 25WV		
C35			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C36 -40		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C41			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C42			C90-1334-05	NP-ELEC 47UF 10WV		
C43		*	CC41FSL1H020C	CYLND CHIP C 2.0PF C		
C44			C90-1334-05	NP-ELEC 47UF 10WV		
C45 ,46			CF92FV1H102J	MF 1000PF J		
C47			C90-1334-05	NP-ELEC 47UF 10WV		
C48 -53			CF92FV1H102J	MF 1000PF J		
C54 ,55			C90-0822-05	ELECTRO 47UF 16WV		
C56		*	C93-0012-05	CYLND CHIP C 0.01UF M		
C57		*	C93-0013-05	CERAMIC 22000PF 25WV		
C58		*	CK41FA1H101K	CYLND CHIP C 100PF K		
C59		*	CK41FY1E102M	CYLND CHIP C 1000PF M		
C60			CF92FV1H102J	MF 1000PF J		
C61 ,62		*	C93-0012-05	CYLND CHIP C 0.01UF M		
CF1 -4			L72-0190-05	CERAMIC FILTER	E	
CF1 -4			L72-0505-05	CERAMIC FILTER	MK	
L1 ,2		*	L92-0018-05	FERRITE CORE		
L3			L40-1092-16	SMALL FIXED INDUCTOR(1UH,M)		
L4		*	L92-0018-05	FERRITE CORE		
L5			L40-1092-16	SMALL FIXED INDUCTOR(1UH,M)		
L6 ,7		*	L92-0018-05	FERRITE CORE		
L8			L39-0128-05	PEAKING COIL		
L9			L30-0435-05	FM IFT		
L10		*	L92-0018-05	FERRITE CORE		
L11			L30-0434-05	FM IFT		
L12			L32-0294-05	FM OSCILLATING COIL		
L13		*	L92-0018-05	FERRITE CORE		
L14		*	L40-1001-14	SMALL FIXED INDUCTOR(10UH,K)		
-			R92-0338-05	CLYND CHIP R 0 OHM		

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-			R92-0350-05	JUMPER WIRE (RESISTOR TYPE)		
R1 ,2		*	RD41FB2B331J	CYLND CHIP R 330 J 1/8W		
R3		*	RD41FB2B821J	CYLND CHIP R 820 J 1/8W		
R4		*	RD41FB2B131J	CYLND CHIP R 130 J 1/8W	MK	
R4		*	RD41FB2B221J	CYLND CHIP R 220 J 1/8W	E	
R5			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R6 ,7		*	RD41FB2B132J	CYLND CHIP R 1.3K J 1/8W		
R8 ,9			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R10			RD41FB2B561J	CYLND CHIP R 560 J 1/8W		
R11			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R12		*	RD41FB2B821J	CYLND CHIP R 820 J 1/8W		
R13			RD41FB2B100J	CYLND CHIP R 10 J 1/8W	E	
R14		*	RD41FB2B131J	CYLND CHIP R 130 J 1/8W	MK	
R14		*	RD41FB2B221J	CYLND CHIP R 220 J 1/8W	E	
R15			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R16 ,17		*	RD41FB2B132J	CYLND CHIP R 1.3K J 1/8W		
R18 ,19			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R20		*	RD41FB2B221J	CYLND CHIP R 220 J 1/8W	E	
R21			RD41FB2B561J	CYLND CHIP R 560 J 1/8W		
R22		*	RD41FB2B362J	CYLND CHIP R 3.6K J 1/8W	E	
R23			RD41FB2B100J	CYLND CHIP R 10 J 1/8W	E	
R24		*	RD41FB2B331J	CYLND CHIP R 330 J 1/8W		
R25			RD41FB2B561J	CYLND CHIP R 560 J 1/8W		
R28			RD41FB2B104J	CYLND CHIP R 100K J 1/8W		
R29			RD41FB2B471J	CYLND CHIP R 470 J 1/8W		
R30			RD41FB2B104J	CYLND CHIP R 100K J 1/8W		
R31 ,32		*	RD41FB2B105J	CYLND CHIP R 1.0M J 1/8W		
R33		*	RD41FB2B101J	CYLND CHIP R 100 J 1/8W		
R34			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R35			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W		
R36 -41			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R42			RD41FB2B224J	CYLND CHIP R 220K J 1/8W		
R43			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R44		*	RD41FB2B221J	CYLND CHIP R 220 J 1/8W		
R45		*	RD41FB2B123J	CYLND CHIP R 12K J 1/8W		
R47			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W		
R48		*	RD41FB2B105J	CYLND CHIP R 1.0M J 1/8W		
R49			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R50			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R51			RD41FB2B332J	CYLND CHIP R 3.3K J 1/8W		
R52			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R54		*	RD41FB2B101J	CYLND CHIP R 100 J 1/8W		
R55		*	RD41FB2B331J	CYLND CHIP R 330 J 1/8W		
R57			RD41FB2B473J	CYLND CHIP R 47K J 1/8W		
R58			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R59 ,60		*	RD41FB2B513J	CYLND CHIP R 51K J 1/8W		
R61			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R62 ,63		*	RD41FB2B513J	CYLND CHIP R 51K J 1/8W		
R64		*	RD41FB2B113J	CYLND CHIP R 11K J 1/8W		
R65			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R66 ,67		*	RD41FB2B513J	CYLND CHIP R 51K J 1/8W		
R68 ,69			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R70 -79		*	RD41FB2B513J	CYLND CHIP R 51K J 1/8W		
R80			RD41FB2B273J	CYLND CHIP R 27K J 1/8W		
R81			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		

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⚠ indicates safety critical components.

* New Parts
Parts without **Parts No.** are not supplied.
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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
R82			RD41FB2B822J	CYLND CHIP R 8.2K J 1/8W		
R83		*	RD41FB2B123J	CYLND CHIP R 12K J 1/8W		
R84			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R85		*	RD41FB2B105J	CYLND CHIP R 1.0M J 1/8W		
R86			RD41FB2B223J	CYLND CHIP R 22K J 1/8W		
R87		*	RD41FB2B393J	CYLND CHIP R 39K J 1/8W		
R88			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R89		*	RD41FB2B683J	CYLND CHIP R 68K J 1/8W		
R90 -93			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R94			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R95			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R96			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R97			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R98		*	RD41FB2B123J	CYLND CHIP R 12K J 1/8W	E	
R98			RD41FB2B333J	CYLND CHIP R 33K J 1/8W	MK	
R99			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R100			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R101			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R102		*	RD41FB2B153J	CYLND CHIP R 15K J 1/8W	MK	
R102			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W	E	
R103			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R104			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R105			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R106			RD41FB2B561J	CYLND CHIP R 560 J 1/8W		
R107			RD41FB2B223J	CYLND CHIP R 22K J 1/8W	MK	
R107			RD41FB2B822J	CYLND CHIP R 8.2K J 1/8W	E	
R108			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R109			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R110			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R111			RD41FB2B332J	CYLND CHIP R 3.3K J 1/8W	E	
R111,112			RD41FB2B103J	CYLND CHIP R 10K J 1/8W	MK	
R112			RD41FB2B103J	CYLND CHIP R 10K J 1/8W	E	
R113			RD41FB2B561J	CYLND CHIP R 560 J 1/8W		
R114,115			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R116			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R117			RD41FB2B561J	CYLND CHIP R 560 J 1/8W		
R118			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R119			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R120			RD41FB2B222J	CYLND CHIP R 2.2K J 1/8W		
R121			RD41FB2B473J	CYLND CHIP R 47K J 1/8W		
R122			RD41FB2B102J	CYLND CHIP R 1.0K J 1/8W		
R123			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R124			RD41FB2B100J	CYLND CHIP R 10 J 1/8W	E	
R125,126			RD41FB2B472J	CYLND CHIP R 4.7K J 1/8W		
R127		*	RD41FB2B101J	CYLND CHIP R 100 J 1/8W		
R128		*	RD41FB2B154J	CYLND CHIP R 150K J 1/8W		
R129		*	RD41FB2B105J	CYLND CHIP R 1.0M J 1/8W		
R130			RD41FB2B103J	CYLND CHIP R 10K J 1/8W		
R131			RD41FB2B473J	CYLND CHIP R 47K J 1/8W		
R132-135			RD41FB2B104J	CYLND CHIP R 100K J 1/8W		
R136,137		*	RD41FB2B105J	CYLND CHIP R 1.0M J 1/8W		
VR1			R12-1070-05	TRIMMING P@T. (1K)ST@P LEVEL		
VR2			R12-5048-05	TRIMMING P@T. (100K)NAR DIST/L		
VR3			R12-1073-05	TRIMMING P@T. (4.7K)DET DIST		
VR4 ,5			R12-3101-05	TRIMMING P@T. (22K)M@N@ DIST		

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VR6			R12-1070-05	TRIMMING POT. (1K)MONO DIST/3RD		
VR7 -9			R12-3101-05	TRIMMING POT. (22K)ST. SUB,ST. L		
D1 -4			1SS184	DIODE		
D6			RLS-73	DIODE		
D7 ,8		*	1SS226	DIODE		
D9 ,10			KV1320-2	VARIABLE CAPACITANCE DIODE		
D11		*	RD5.1M(B2)	ZENER DIODE		
D12			RLS-73	DIODE		
IC1 -3			BA401	IC(FM IF)		
IC4			UPC1163HA	IC(IF AMP)		
IC5			LA1231NS	IC(FM IF/DETECTION)		
IC6			NJM5532D-D	IC(OP AMP X2)		
IC7 -9			NJM4200D	IC(OP AMP X2)		
IC10-15			M5218P	IC(OP AMP X2)		
Q1		*	2SK302(Y,GR)	FET		
Q3 ,4			2SK211(Y,GR)	FET		
Q5 -7		*	2SK425(X16,X17)	FET		

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KT-3300D

SPECIFICATIONS

– EIA –

[FM tuner section]

Tuning frequency range	87.5 MHz to 108 MHz	
Antenna impedance	75 ohms unbalanced	
	DISTANCE	**DIRECT**
Usable sensitivity (IHF)	10.8 dBf (0.95 μV)	31.2 dBf (10 μV)
50 dB quieting sensitivity (IHF)		
Mono	16.2 dBf (1.8 μV)	36.3 dBf (18 μV)
Stereo	38.8 dBf (24 μV)	58.8 dBf (240 μV)
Total harmonic distortion	**WIDE**	**NARROW**
Mono: 100 Hz	0.007%	0.02%
1,000 Hz	0.004%	0.01%
50 Hz to 10,000 Hz	0.009%	0.04%
Stereo: 100 Hz	0.015%	0.04%
1,000 Hz	0.008%	0.03%
50 Hz to 10,000 Hz	0.04%	0.15%
Signal-to-Noise ratio (85 dBf IHF)		
Mono	92 dB	
Stereo	86 dB	
(65 dBf)		
Mono	92 dB	
Stereo	76 dB	
	WIDE	**NARROW**
Capture ratio	1.0 dB	2.5 dB
Alternate channel selectivity (IHF: ±400 kHz)	70 dB	100 dB
Stereo separation		
1,000 Hz	70 dB	58 dB
50 Hz to 10,000 Hz	55 dB	45 dB
15,000 Hz	45 dB	40 dB
Frequency response	20 Hz to 15,000 Hz ±0.5 dB	
Image rejection ratio	80 dB	
IF rejection ratio	110 dB	
Spurious rejection ratio	100 dB	
AM suppression ratio	70 dB	
Sub carrier suppression ratio	70 dB	
Output level/impedance at 1,000 Hz, 100% dev.		
Fixed	0.6 V/2.3 kΩ	
Variable	1.2 V/1.0 kΩ (MAX.)	
Multipath output		
Vertical	0.05 V/10 kΩ	
Horizontal	0.6 V/10 kΩ	

[General]

Power consumption	25 W
Dimensions	W: 440 mm (17-5/16") H: 88.5 mm (3-7/16") D: 327 mm (13-1/4")
Weight (Net)	5.3 kg (11.7 lb)

– IEC/NF –

[FM tuner section]

Tuning frequency range	87.5 MHz to 108 MHz	
Antenna impedance	75 ohms unbalanced	
Sensitivity (DIN)		
Mono: S/N 26 dB, 40 kHz dev.	0.9 μV	
Stereo: S/N 46 dB, 46 kHz dev.	20 μV	
Limiting level		
–3 dB point, 40 kHz dev.	0.45 μV	
Total harmonic distortion (DIN)	**WIDE**	**NARROW**
Mono: 1 kHz, 40 kHz dev.	0.01%	0.03%
Stereo: 1 kHz, 46 kHz, dev.	0.04%	0.1%
Signal-to-Noise ratio		
Weighted		
Mono: 40 kHz dev., 1 mV input	82 dB	
Stereo: 46 kHz dev., 1 mV input	67 dB	
Unweighted		
Mono: 40 kHz dev., 1 mV input	78 dB	
Stereo: 46 kHz dev., 1 mV input	67 dB	
	WIDE	**NARROW**
Capture ratio	2.0 dB	3.5 dB
Alternate channel selectivity ±300 kHz 20 dB input (DIN)	55 dB	80 dB
Stereo separation		
1 mV input (DIN)		
250 Hz	60 dB	50 dB
1 kHz	62 dB	50 dB
6.3 kHz	52 dB	40 dB
12.5 kHz	45 dB	33 dB
Frequency response	20 Hz to 15 kHz ±0.5 dB	
Image rejection ratio	80 dB	
IF rejection ratio	110 dB	
Spurious rejection ratio	100 dB	
AM suppression ratio	70 dB	
Sub carrier suppression ratio		
19 kHz: 46 kHz dev.	55 dB	
38 kHz: 46 kHz dev.	70 dB	
Output level/impedance at 1,000 Hz, 100% dev.		
Fixed	0.6 V/2.3 kΩ	
Variable	1.2 V/1.0 kΩ (MAX.)	
Multipath output		
Vertical	0.05 V/10 kΩ	
Horizontal	0.6 V/10 kΩ	

[General]

Power consumption	25 W
Dimensions	W: 440 mm H: 88.5 mm D: 327 mm
Weight (Net)	5.3 kg

Note:
We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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